International Labour Office

# Sectoral Studies on Decent Work in Global Supply Chains

## Comparative Analysis of Opportunities and Challenges for Social and Economic Upgrading

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Sectoral Policies Department (SECTOR)
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# Foreword

The International Labour Organization (ILO) is the United Nations specialized agency devoted to advancing opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity. The ILO Sectoral Policies Department (SECTOR) promotes decent work by supporting the Organization's tripartite constituents to address social and labour issues in different economic sectors at the global, regional and national levels. The purpose of these studies on social and economic upgrading in global supply chains is to encourage the exchange of ideas and to provide supplementary inputs to the general discussion on Decent Work in Global Supply Chains scheduled to take place during the 2016 Session of the International Labour Conference.

The individual global supply chain studies were prepared for the ILO by the following external consultants: Andrew Bibby (retail commerce with a focus on food and apparel); Hyejin Yoon (animation and visual effects); and Gale Raj-Reichert (electronics). Lucy Lu Reimers from SECTOR conducted the study on social and economic upgrading in gold supply chains.

The following ILO colleagues provided valuable reviews of and technical contributions to these background studies: Sabine de Bruijn, Sara Elder, Martin Hahn, Yasuhiko Kamakura, Youbin Kang, Oliver Liang, Maria Beatriz Mello da Cunha, Anne Posthuma, David Seligson, and John Sendanyoye. May Hofman, an external consultant, proofread and edited the material.

The responsibility for opinions expressed in these studies rests solely with their authors, and their publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

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Alette van Leur,
Director, Sectoral Policies Department

# Contents







# A comparative analysis of economic and social upgrading in the animation, electronics, gold and retail sectors

*Sectoral Policies Department (SECTOR)*

## Introduction

Many governments and employers' and workers' organizations want to know how engagement with global supply chains (GSCs) can help national and local economies and communities grow in a sustainable and inclusive manner, promote jobs and contribute to realizing decent work for all. In June 2016, the three constituents will come together at the International Labour Conference (ILC) to have a general discussion about decent work in GSCs.

As input into the ILC discussion in 2016, the International Labour Office (ILO) conducted, with the support of the Netherlands' Ministry of Foreign Affairs, studies of economic and social upgrading in global supply chains in four different sectors of the economy: animation/visual effects (VFX), electronics, gold and retail. These four sectors were selected for their diversity to provide insight into general trends across the global economy. A comparison of the four sectors helps to understand the social and the economic implications of supply chains within the context of the changing global economy and to identify potential areas for future work. In addition, it contributes to promoting decent work in GSCs through expanding and disseminating knowledge about strategies to improve working conditions as well as productivity and competitiveness in different sectors of the global economy. The analysis carried out under this project will help inform the 2016 discussion and feed into the preparations and possible follow-up to the ILC discussion.

## Cross-sectoral trends in economic and social upgrading in GSCs

A key feature of all four sectors compared here is their complex and global supply chains. Animation/VFX is now produced in many different countries, and some countries have supported post-production and visual effects to create jobs. Gold mining is spread among approximately 90 countries. The top ten global retailers operate in 16.5 countries on average, while the largest – Walmart – operates in 25 countries and sources from many more (Deloitte, 2015). The electronics industry is considered to have the most extensive and dispersed global sourcing of all manufacturing sectors (Sturgeon and Kawakami, 2011).

The rise of GSCs is often linked to significant enterprise and employment creation and growth. The animation industry has grown since 2008, particularly in Asia (KOCCA, 2014). The commerce sector is a major source of employment worldwide, providing work to approximately 13 per cent of the workforce in Germany, 16 per cent in the United States and 22 per cent in South Africa. The electronics industry generates more revenue and employs more workers than any other manufacturing sector (Sturgeon and Kawakami, 2011); an estimated 18 million workers worldwide (ILO, 2007; Better

Work, 2010). The exception is large-scale gold mining, which creates relatively few jobs compared to other industries (Fleming and Measham, 2014). Artisanal and small-scale mining, on the other hand, is extremely labour-intensive and creates considerably more jobs, particularly in developing countries in Africa, Asia, Oceania, and Central and South America (World Bank, 2013).

Increased international outsourcing and offshoring has been a key factor in promoting the inclusion of developing countries, particularly in Asia, in GSCs. Asia's share of the animation market quadrupled in just four years, between 2009 and 2012 (Coonan, 2014; Fan, 2013), and most outsourced manufacturing activities for electronics are located in Asia. An estimated 62 per cent of LED and LCD televisions, 70 per cent of semiconductors, 76 per cent of car navigation systems, 86 per cent of mobile and smart phones, and 100 per cent of digital cameras are manufactured in the Asia region (Matsuzaki, 2015). Apple outsources nearly all of its manufacturing to firms in Asia (SEC 10-K, 2014). In 2014, China was the largest producer of gold in the world, with 15 per cent of global production (World Gold Council, 2015).

The rise in GSCs has been accompanied by opportunities for firms and workers to move from low-value to relatively high-value activities, a process known as economic upgrading.[1] There are cases in all four sectors of "process upgrading", where changes in the production process have made the supply chain more efficient. In animation, the use of transparent sheets replaced the older production technique of drawing backgrounds for every scene, improving the efficiency and speed of producing animation. In the commerce sector, the development of Efficient Consumer Response (ECR) has harnessed technologies to better understand consumer behaviour and rapidly increased the speed at which retailer stocking decisions are taken (ILO, 2006). Electronics manufacturer Foxconn has created its own robots, called Foxbots, using 10,000 of them to assemble the Apple iPhone 6 (Comparecamp.com, 2014). A high-altitude mine in Peru replaced hammers and traditional leg-driven rock grinders with pneumatic drills and small electric mills when electricity was extended to the region (Larmer, 2009).

"Product upgrading" has also occurred, where more advanced product types have been introduced into the supply chain. Some electronics factories in Mexico have moved from televisions to flat panels and digital and high definition television sets (Carillo and Zarate, 2009). Artisanal mining cooperatives have upgraded their product by getting it certified as Fairtrade (Alliance for Responsible Mining, 2015). Some firms have changed the mix of activities they perform towards higher value-added tasks, known as "functional upgrading". For instance, there are cases where electronics factories have moved into more knowledge-intensive research and development activities and production of higher value-added goods that had previously been manufactured elsewhere. The gold company Metalor started producing gold grain for luxury and high-tech products and special high purity gold for electronics, in addition to standard gold products such as gold bars and coins (Metalor, 2015). In animation, many animation/VFX studios have changed from supplying larger animation studios as subcontractors to being content creators that make profits from auxiliary markets (Yoon, 2015). In retail, countries such as Honduras and Kenya have shifted from fresh fruit and vegetable production to include packing and cold storage. Chile has moved further still up the value chain by developing a food processing industry (Cattaneo et al., 2013). "Chain upgrading", where a firm shifts to a more technologically advanced production chain, appears less common, with few examples from the sectors studied.

1 See Gereffi (2005): Economic upgrading can be broken down into process, product, functional and chain upgrading.

The potential for GSCs to yield a path of inclusive development is increased when the dual processes of economic and social upgrading are combined, allowing suppliers to move into higher value-added production whilst ensuring decent work. Social upgrading is defined in this report as the gradual process leading to decent work in GSCs. The concept of social upgrading is aligned to the four "inseparable, interrelated and mutually supportive" strategic objectives of the ILO's Decent Work Agenda: i.e. employment, rights at work, social protection and social dialogue, alongside gender equality and non-discrimination as cross-cutting objectives.[2]

Social upgrading is a relatively new concept to the ILO.[3] However, it is widely used in leading academic literature on GSCs and in other UN organizations[4] to counterbalance the predominant focus on economic upgrading only (Barrientos, Gereffi and Rossi, 2011). It refers to the qualitative aspects of employment and does not condone the violation of applicable national laws and international labour standards including the fundamental principles and rights at work (FPRW), which require to be respected everywhere, at all times and under all circumstances. The Social Justice Declaration explicitly highlights that the violation of FPRW cannot be invoked or otherwise used as a legitimate comparative advantage and that labour standards should not be used for protectionist purposes. Social upgrading reflects the ultimate objective that decent work is not attained until the four inseparable, interrelated and mutually supportive dimensions of decent work have been realized.

Social upgrading needs to accompany economic upgrading in order to generate the desired decent work and developmental outcomes. There exists evidence that economic upgrading may lead to social upgrading. The gold produced by Fairmined certified organizations brings a higher price and is guaranteed to have been produced free of child labour and unsafe working conditions, and with minimal environmental impact. The move by some electronics factories in Mexico (Carillo and Zarate, 2009), Republic of Korea, Malaysia, Taiwan (China), and Thailand (Rasiah, 2004) into research and development activities led to increased demand for skilled workers.

Yet it is clear from the four sectors analysed here that social upgrading has not automatically followed economic upgrading. Global competition based on quality, cost, volumes and delivery times, plus intense competition between suppliers, places downward pressures on wages, working conditions and respect for fundamental rights of the workers participating in GSCs. Where power relations between buyers (e.g. retailers and large first-tier producers) and suppliers have become more asymmetrical, costs and risks have in many cases been shifted onto the companies, subcontractors and workers further down their supply chains. In subcontracted tiers of GSCs, suppliers often cope with these pressures through use of non-standard forms of employment.

2 ILO Declaration on Social Justice for a Fair Globalization, 2008, para. I A.

3 For example, C. Gimet, B. Guilhon and N. Roux: "Social upgrading in globalized production: The case of the textile and clothing industry" in *International Labour Review*, Volume 154/3, 2015; S. Barrientos, F. Mayer, J. Pickles and A. Posthuma: "Decent work in global production networks: Framing the policy debate" in *International Labour Review*, Volume 150/3–4, 2011; S. Barrientos; G. Gereffi and A. Rossi: "Economic and social upgrading in global production networks: A new paradigm for a changing world" in *International Labour Review*, Volume 150/3–4, 2011.

4 For example, United Nations Conference on Trade And Development (UNCTAD): A*dvancing the Post-2015 Development Agenda Requires A Development Policy Rethink. Policy Brief No. 31*. February 2015; OECD: *Global Production Networks And Employment: A Developing Country Perspective*. Working Party of the Trade Committee. 4-5 December 2012; T. Fukunishi, K. Goto and T. Yamagata: "Aid For Trade And Value Chains In Textiles And Apparel", World Trade Organization, 2013.

Indeed, in the four sectors analysed here, non-standard forms of employment are ubiquitous. In global retailing supply chains, accelerated timelines in fashion put pressure on suppliers to increase or decrease production at short notice, which leads to excess overtime and casual employment. A survey of electronics firms in developing countries revealed that 36 per cent of firms used short-term temporary or seasonal employees (Aleksynska and Berg, 2015, based on data from the World Bank Enterprise Survey, 2014). In electronics factories in Hungary, Malaysia and Mexico, workers are hired as temporary workers and have their contracts renewed continually (Kaur, 2008; Salame, 2011; CEREAL, 2011; Pal, 2013). Animation work is project-based and often done by freelancers. In the formal gold mining industry, there are cases of forced labour being used by subcontractors. For example, forced labour was reported to be present in an Eritrean gold, copper and zinc mine that supplied a Canadian mining firm (Human Rights Watch, 2013).

Most of the decent work challenges faced in the animation, electronics, gold and retail sectors are related to the use of non-standard forms of employment. In the gold sector, informal artisanal and small-scale miners experience poor occupational health and safety conditions related to the widespread use of hazardous chemicals such as cyanide and mercury in gold pre-processing operations. This is exacerbated by the fact that as informal self-employed workers, they lack social protection and face difficulties in organizing and accessing social dialogue. Jobs in the animation/VFX industry are usually based on short-term contracts, irregular working schedules and low job security (Hesmondhalgh and Baker, 2010). Irregular working schedules are a major reason why workers leave the animation/VFX industry (Okeda and Koike, 2011). In apparel retailers' supplier factories, workers who attempt to organize a trade union or belong to one have in some cases been subject to violence and intimidation (CCC, 2014), or "victimized, threatened and dismissed from work" (Parakuni et al., 2015, pp. 45, 48). In the electronics industry, higher wages through skills upgrading are generally limited to workers in higher-skilled management and engineering positions, which normally make up only a small percentage of the overall workforce in the electronics industry.

## GSC governance for social upgrading

When social upgrading accompanies economic upgrading, it is normally a result of intentional policies and initiatives. For example, in value-added terms, the electronics industry in Singapore has surpassed all other countries in South-East Asia since the early 2000s as a result of government policies and programmes for skills development as well as economic development (Rasiah, Xiao-Shan and Govindaraju, 2014). In the garment sector, the Bangladesh Accord on Fire and Building Safety is a significant step by retailers toward strengthening social dialogue. The Accord is a five-year agreement signed in May 2013 by over 200 retailers and brands, global unions IndustriALL and UNI Global Union, and eight Bangladeshi trade unions. All signatories agreed to a binding and legally enforceable dispute resolution process, independent inspections, full declarations of suppliers used, training and participation of workers in health and safety and long-term sourcing arrangements. In 2002 (and updated in 2009), AngloGold Ashanti signed a Global Framework Agreement with the International Federation of Chemical, Energy, Mining and General Workers Unions (ICEM). By signing the Agreement AngloGold Ashanti committed itself to respect the right to freedom of association, eliminate forced labour, abolish child labour, and provide a safe and healthy working environment (IndustriALL and AngloGold Ashanti, 2009). The challenge remains that governance initiatives generally do not cover subcontracted workers. And as we have seen, it is often the lower tiers in GSCs that have the worst working conditions.

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# Promoting Decent Work in Global Retail Supply Chains: Food and Apparel

*Andrew Bibby*

**Study 1**

# Study 1

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# Executive summary

Supply chains refer, step by step, to the activities followed from conception to final use to bring a product to market. Supply chains play a vital role in the commerce sector in bringing the products wanted by customers to retailers' shelves. The commerce sector comprises an important part of the world economy and is highly globalized.

Commerce companies (through such developments as Efficient Consumer Response – ECR) have attempted to move in recent years towards building supply chains on a collaborative rather than adversarial basis. This trend, which can bring cost savings, has been strongly technology-enabled.

Commerce firms occupy lead firm positions in a number of global supply chains (GSCs), most notably those in fruit, vegetables, fish and other food items, and those in clothing and fashionwear (apparel). GSCs in apparel have been transformed with the ending of trade quotas in 2005.

The value created during the stages of a global supply chain (GSC) is not shared equally with all participating firms, and high-value elements tend to be those earlier (R&D, design) and later (logistics, marketing, sales) in the chain. Economic upgrading (moving to higher value-added work) is an aspiration for many companies, and countries, located at lower-value parts of the chain. Social upgrading (the gradual process leading to decent work in GSCs) can be concomitant with economic upgrading; it can also occur independently.

Commerce firms, under pressure to be competitive, have a commercial interest in seeking to make the GSCs for their goods as efficient and low-cost as possible, an approach which according to critics can have a knock-on effect on wages and employment conditions for workers in the GSCs. Trade unions and campaigning groups have argued for lead firms to show more responsibility towards workers elsewhere in their GSCs, and there has been consumer pressure exerted in some countries towards this end.

This approach, while strongly contested by some companies, has been endorsed by a number of leading retailers who have declared their desire to promote decent working conditions by their suppliers and subcontractors. Unilateral steps to achieve this face challenges, but this report identifies a number of examples of good practice. Global framework agreements (GFAs) have been signed between a number of commerce companies and global union federations, and there are examples also of other initiatives by the social partners as well as tripartite international initiatives.

The Bangladesh Accord, an enforceable legal agreement signed between retailers, brands and unions after the Rana Plaza tragedy, is seen by its advocates as a step forward. The aim of creating a better functioning social dialogue in key commerce GSCs, especially those of apparel, could help remove labour costs from inter-firm competition, they claim. They maintain that this could avoid a damaging race to the bottom, one which hurts responsible retailers as well as workers.

The report concludes with a series of recommendations. In logistical terms commerce GSCs operate remarkably effectively, but the lack of decent work in some cases within GSCs needs to be addressed, with the ultimate aim of establishing effective social dialogue in the relevant companies. Suggestions are made for ways to strengthen existing international instruments, including the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, and the role which governments, employers' organizations and trade unions can play in this respect is discussed. The report asserts that the benefits of social upgrading are considerable, and that moves towards economic upgrading in GSCs should be directly linked to social upgrading.

# Abbreviations and acronyms

| | |
|---|---|
| **BFC** | Better Factories Cambodia |
| **BGMEA** | Bangladesh Garment Manufactures & Exporters Association |
| **BKMEA** | Bangladesh Knitwear Manufacturers & Exporters Association |
| **BSCI** | Business Social Compliance Initiative |
| **CCC** | Clean Clothes Campaign |
| **CMT** | Cut, Make and Trim |
| **CEO** | Chief Executive Officer |
| **CSR** | Corporate Social Responsibility |
| **DGB** | Deutscher Gewerkschaftsbund (Confederation of German Trade Unions) |
| **ECR** | Efficient Consumer Response |
| **EDI** | Electronic Data Interchange |
| **EPZ** | Export Processing Zone |
| **FDI** | Foreign Direct Investment |
| **FOB** | Freight on Board |
| **GFA** | Global Framework Agreement |
| **GSC** | Global Supply Chain |
| **GVC** | Global Value Chain |
| **IFC** | International Finance Corporation |
| **IHLO** | Hong Kong liaison office of the international trade union movement |
| **ILO** | International Labour Office/Organization |
| **ITUC** | International Trade Union Confederation |
| **IUF** | International Union of Food and Allied Workers |
| **JAAF** | Joint Apparel Association Forum (Sri Lanka) |
| **MFA** | Multi-Fibre Arrangement |
| **MNE** | Multinational Enterprise |
| **NCP** | National Contact Point (OECD) |
| **NEM** | Non-Equity Mode |
| **NGO** | Non-Governmental Organization |
| **ODM** | Own Design Manufacture |
| **OECD** | Organisation for Economic Co-operation and Development |
| **OEM** | Own Equipment Manufacture |
| **OSH** | Occupational Safety and Health |
| **R&D** | Research and Development |
| **RFID** | Radio-Frequency Identification Chips |
| **RMG** | Ready-Made Garments |
| **SACOM** | Students and Scholars Against Corporate Misbehaviour |
| **SMV** | Standard Minute Value |
| **TCLF** | Textiles, Clothing, Leather and Footwear |
| **TUAC** | Trade Union Advisory Committee |
| **UNCTAD** | United Nations Conference on Trade and Development |
| **WRAP** | Worldwide Responsible Accredited Production |
| **WTO** | World Trade Organization |

# 1. The commerce sector and global supply chains

## 1.1 Introduction

The commerce sector plays a significant role in the world economy. It is an important contributor to national GDP: it delivers around 8 per cent of GDP in the United States and about 14 per cent in India, for example (PwC, 2014). It is also a major provider of employment worldwide, one of the most important sources of jobs. Commerce provides work to around 13 per cent of the workforce in Germany, 16 per cent in the United States and 22 per cent in South Africa.

By "commerce" we mean in this context retail and wholesale trade, sometimes also described as the distributive trades. The commerce sector is the mechanism whereby goods and merchandise – however and wherever they may have been produced – are brought into contact with their end user, the consumer. Increasingly, the goods which retailers sell to consumers in their stores are being sourced worldwide. T-shirts on sale in US stores may have been manufactured in Bangladesh. Fresh vegetables in European supermarkets may have been flown in from East Africa. Tuna for the Japanese market may have been caught by Ecuadorian fishermen.

Wholesalers and retailers occupy a key position downstream in global supply chains (GSCs) and their role is increasingly becoming a dominant one. This report looks in detail at these recent developments and trends in commerce GSCs and at the implications for decent work.

All GSCs require coordination, and this role is increasingly being taken on by a small number of very large firms. In some instances the retailer may acquire goods from lead firms in GSCs which are not themselves primarily retailers. However, as we shall see, there are other GSCs where major international companies in the commerce sector themselves occupy the position of lead firms. In these cases, retailers have a central role to play in ensuring that the supply chains operate efficiently and productively and in determining that the quality of the goods sourced is appropriate for purpose. Though strongly contested, some argue that they also have a significant responsibility towards those employed throughout the supply chain, since the terms they offer to their suppliers in turn determine the employment and working conditions those suppliers themselves can offer their workers.

## 1.2 The structure of the commerce sector

Although there is considerable diversity in the commerce sector across the world, with many very small retailers and (particularly in developing countries) hawkers and traders operating in the informal economy, there has been a clear trend in recent years towards greater consolidation into larger companies. The industry is highly globalized and includes a number of very significant multinational corporations. The Fortune Global 500 league table of the largest international businesses reports that 37 of these operate in the sector. It is significant that the largest company in the world, Wal-Mart Stores, is in the commerce sector.

Wal-Mart, with a turnover currently approaching half a trillion US dollars, operates in over 25 countries and in terms of size is in a league of its own. However, as table 1.1 shows, there are a number of other major commerce companies with very significant turnovers and global reach.

**Table 1.1: Top 15 global retailers, 2013 (US$ millions)**

| Rank | Name of company | Country of origin | Retail gross revenue |
|---|---|---|---|
| 1 | Wal-Mart Stores | United States | 476 294 |
| 2 | Costco Wholesale Corp. | United States | 105 156 |
| 3 | Carrefour | France | 98 688 |
| 4 | Schwarz Unternehmens Truehand | Germany | 98 662 |
| 5 | Tesco | United Kingdom | 98 631 |
| 6 | Kroger Co. | United States | 98 375 |
| 7 | Metro Ag. | Germany | 86 393 |
| 8 | Aldi | Germany | 81 090 |
| 9 | Home Depot | United States | 78 812 |
| 10 | Target Corporation | United States | 72 596 |
| 11 | Walgreen Co. | United States | 72 217 |
| 12 | CVS Caremark | United States | 65 618 |
| 13 | Casino Guichard-Perrachon | France | 63 468 |
| 14 | Auchan | France | 62 444 |
| 15 | Amazon | United States | 60 903 |

Source: Deloitte, 2015. Data for Schwarz Unternehmens Truehand, Metro Ag. and Aldi reflect wholesale sales; data for Casino Guichard-Perrachon include wholesale and retail sales.

Deloitte (2015) reports that the top ten companies in this table on average operate directly in 16.5 countries; the top 250 operate on average in ten countries.

## 1.3 Current challenges for the commerce sector

The commerce sector, while very important, is facing significant challenges. Individual companies are facing pressures in maintaining both market share and profitability, something which can affect multinationals as much as smaller businesses (Tesco, for example, has recently reported a US$10 billion annual loss and has withdrawn from some international markets). The economic recession has caused consumers to be more cautious in their spending and to seek low prices. Low pricing strategies have long been a feature of some commerce firms but there is pressure on all retailers to keep prices competitive, and this in turn means pressure on their suppliers upstream in the supply chains to reduce their own costs.

The discussion now in the sector is on the way that shopper habits in developed economies are changing towards a multi-channel approach (one which makes use of convenience stores, discount stores and online shopping as well as traditional supermarkets and hypermarkets). Consumers, in other words, are becoming more fickle.

Online shopping (e-commerce) in particular is rapidly growing in popularity and poses a fundamental threat to traditional business models. The extremely fast-growing specialist e-commerce company Amazon moved into Deloitte's table of the top 15 retail commerce companies in 2015. In addition to pure-play online retailers, such as Amazon and China's JD (formerly Jingdong Century, 360Buy) for whom online sales represent the totality of their business, established retailers are also increasingly exploring ways of linking their conventional business with online alternatives (table 1.2).

**Table 1.2: Top six global e-retailers, 2013 (US$ millions)**

| Rank | Name of company | Country of origin | E-commerce retail sales | E-commerce sales as % of total |
|---|---|---|---|---|
| 1 | Amazon.com | United States | 60 903 | 100 |
| 2 | JD (formerly Jingdong Century, 360Buy) | China | 10 828 | 100 |
| 3 | Wal-Mart | United States | 10 000 (est.) | 2.1 |
| 4 | Apple | United States | 9 000 (est.) | 30.8 |
| 5 | Otto | Germany | 8 188 (est.) | 61.3 |
| 6 | Tesco | United Kingdom | 5 250 (est.) | 5.3 |

Source: Deloitte. 2015.

The implications of current trends in commerce for employment relationships in the sector were the focus of discussions held in the ILO sectoral Global Dialogue Forum on Employment Relationships in Retail Commerce in April 2015, and are also addressed in the ILO background paper prepared for that occasion. The Forum among other things acknowledged the value of social dialogue in achieving decent work in retail commerce (ILO, 2015a, 2015b). But the Forum necessarily focused on employees directly working in commerce itself, rather than indirectly in retailers' supply chains. It is appropriate to complement that work by exploring in more detail the repercussions for employment that developments in commerce are having on supply chains.

# 2. Global supply chains in commerce, and economic and social upgrading

## 2.1 The importance of supply chains in the commerce sector

Supply chains refer, step by step, to the activities which are followed from conception to final use in order to successfully bring a product to market (OECD, 2013). Supply chains can be local (food supplied by a farmer that is sold at a nearby shop, for example), national, regional or global. Although this report will focus on global supply chains, some general comments need to be made about all types of commerce supply chain.

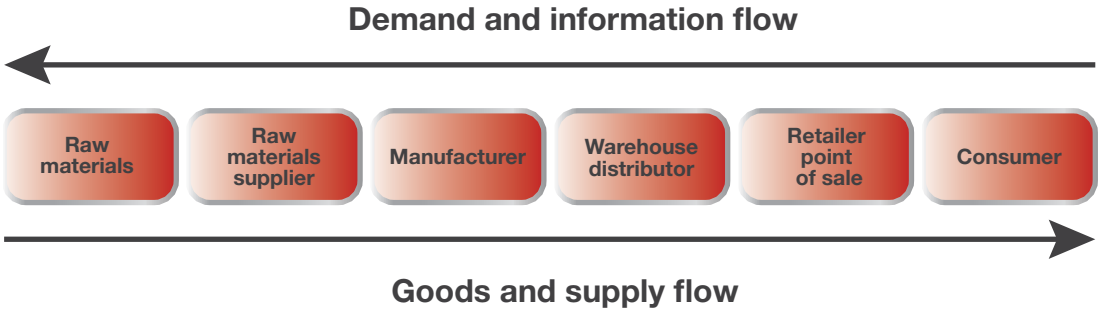
The first point to make is that supply chains play a key and fundamental role in the sector. The challenge for retailers is to ensure that they stock their outlets with the products which consumers want to have, and that they have them available on the shelves in appropriate quantities when customers arrive to buy them. Given the thousands (or even tens of thousands of lines) which may be stocked, this places considerable pressure on retailers to have efficient supply chain and logistics management processes in place.

In particular, it puts a sharp focus on the relationship between the retailer and its suppliers. These relationships can be structured in an adversarial way, where both sides bargain hard to drive the best deal they can for themselves. In this situation, suppliers if they have the power can devote significant efforts to defending their own interests and to countering retailer opportunism (Corsten and Kumar, 2005).

But adversarial relationships increase transaction costs and also create unhelpful friction in the establishment of smooth-flowing supply chains. The sector has therefore sought to move to supply chain relationships based on collaboration and partnership.

One influential approach which has been adopted in retail commerce for more than 20 years is known as Efficient Consumer Response (ECR), developed by the US consultancy firm Kurt Salmon Associates in 1993, and now also a major influence in Europe where the concept is coordinated by the organization ECR Europe. ECR was defined by Kurt Salmon Associates as “a grocery industry strategy in which distributors, suppliers and brokers jointly commit to work closely together to bring greater value to the grocery consumer” (p. 13, quoted in Reyes and Bhutta, 2005, p. 348). Another definition calls it a “strategy in which the grocery retailer, distributor and supplier trading partners work closely together to eliminate excess cost from the grocery supply chain while improving consumer value” (JIPOECR, 1995, p. 96, quoted ibid.). The ECR model can be described in graphic form (figure 2.1):

**Figure 2.1: ECR demand chain model**




Source: Reyes and Bhutta, 2005.

The savings made possible by this collaborative approach have been claimed to be about 11 per cent, achieved primarily through efficient replenishment of goods (maintaining the right quantity of goods required) and efficient promotion (harmonizing promotional activities between manufacturer and retailer). ECR theory suggests that the savings gained from a participative approach to the supply chain are shared between suppliers and retailers.

In order to work successfully, ECR requires effective utilization of technology. The commerce sector has been significantly affected over the past two decades by technological change (ILO, 2006), a trend which continues today. Retailers now have the power to access and analyse customer shopping habits in very great detail through point-of-sale data capture. The commerce sector is a leading proponent of so-called "big data" analysis. Customer loyalty cards offer a way of undertaking highly detailed customer profiling.

This development has been accomplished through the use of barcodes and scanner technology, and more recently, through the use of radio-frequency identification chips (RFID) which can be included in pallets or in individual products.

Also important to ECR and commerce supply chains is the development of electronic data interchange (EDI), a way to exchange business documentation between organizations in a structured machine-processable form. For example, EDI enables suppliers to base production decisions directly on sales data from retailers supplied to them automatically. Changes in logistics are also significant; suppliers operating in ECR relationships in some cases deliver goods directly to individual retail stores without going through wholesaling or distribution centres first.

There seems little dispute that ECR and related initiatives have identified excess costs in supply chains which can be saved. What is less clear is whether these benefits have been shared equitably. One research study focused on this issue pointed out that "Although 'win-win' partnerships… are frequently documented in the popular press, academic studies of collaborative ECR relationships are scarce" (Corsten and Kumar, 2005, p. 90). It suggested that scepticism has been growing among suppliers at the value to them of ECR: "There is a widespread belief among suppliers that ECR is just a convenient label for large and powerful retailers to continue doing what they have been perceived as doing, namely, finding ways to pass costs back to the suppliers" (ibid. p. 81).

The study found that, while collaborative approaches could benefit suppliers as well as retailers, contrary to expectation ECR adoption was also leading to "greater feelings of inequity in the relationship on the part of suppliers" (ibid. p. 90).

The use of the adjective "powerful" in relation to retailers in the quotation above is significant, because the reality is that collaborative relationships may not be between equally powerful partners. Indeed, there is a trend which has seen power shift increasingly from suppliers to retailers. Some supply chains have high levels of power asymmetry between participants.

## 2.2 Global supply chains

Some issues raised by supply chains, including possible implications for jobs and employment conditions, apply whether supply chains are highly localized or global. But issues of power asymmetry become more significant in the case of supply chains that include partners in both developed and developing economies.

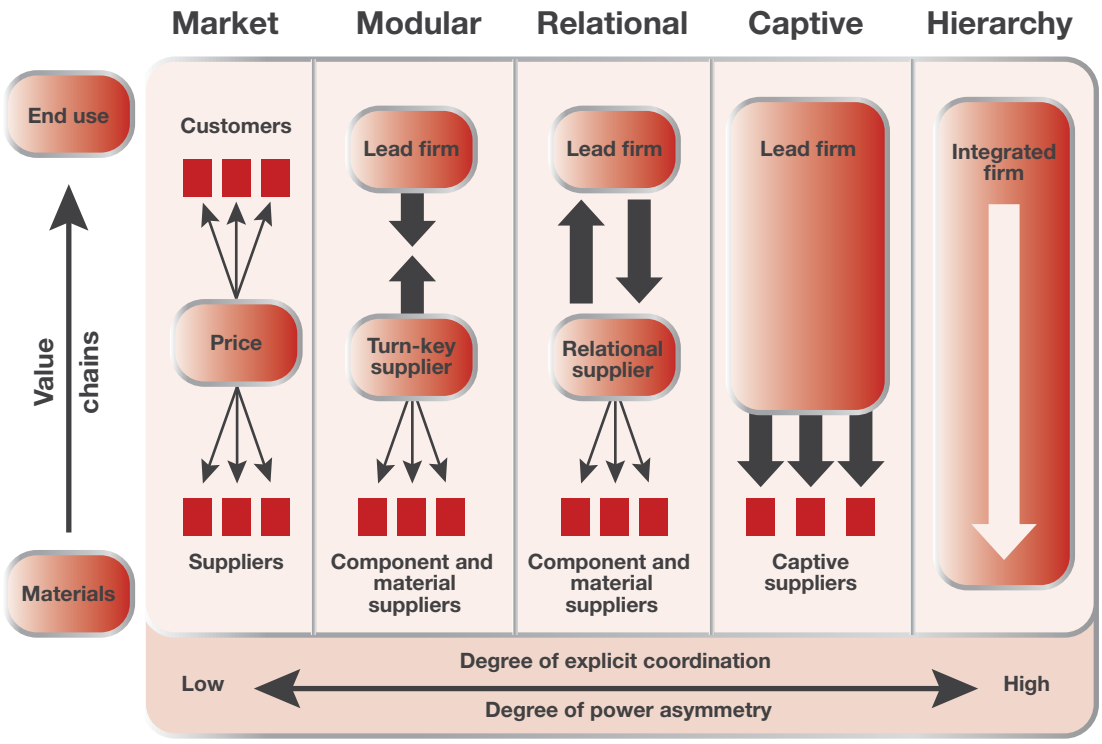
Global trading is not new: the trade in pre-modern times between Asia and Europe along the fabled Silk Road is one example of early human economic interaction between continents. The way that spices, for example, would have made their way from producers across hundreds or thousands of kilometres to users was through a series of discrete trading transactions. GSCs, by contrast, are coordinated and integrated throughout the chains by lead firms, determining how financial, material, and, directly or indirectly, human resources are allocated and flow within GSCs through market-based relationships with suppliers and intermediaries across countries.

GSCs are now playing a much more significant role in world trading for a number of reasons, including technological advances, liberalization of trade and investment, and the access of China to world markets. The concept of GSCs was given a strong theoretical framework by Michael Porter in his 1985 book *Competitive Advantage* and is now an established feature of economic and business thinking. The associated term "global value chains" (GVCs) is also frequently employed; the terms are almost synonymous, with GVCs being utilized by those primarily approaching the subject from an economic viewpoint and wishing to focus on the value added at each stage of the supply chain.

Participant companies in a GSC may be subsidiaries of the lead firm, with ownership secured through foreign direct investment (FDI) by the parent business. However, GSC lead firms frequently make use of companies which are independent in ownership but which are integrated within the supply chain, sometimes to a very high degree. This relationship is sometimes described as the use by lead firms of "non-equity modes" of production (NEMs). UNCTAD's World Investment Report 2013 distinguishes between different degrees of independence for firms in NEM relationships in GSCs, including what it describes as "captive NEMs" where lead firms have significant buying power and exercise significant control over production (UNCTAD, 2013).

Figure 2.2, from work by Gary Gereffi, John Humphrey and Timothy Sturgeon, presents in visual form the different relationships which are possible in GSCs, and also identifies for each the degree of power asymmetry.

**Figure 2.2: Five types of global value chain relationship**




Source: Gereffi, Humphrey and Sturgeon, 2005.

## 2.3 The effect of trends in commerce on GSCs

The changing nature of retailing is directly impacting on commerce GSCs.

The interest in Efficient Consumer Response (ECR), with its emphasis on using technology to understand consumer behaviour and therefore to deliver exactly the right goods needed for future consumer purchases, is associated with a rapid increase in the speed at which retailer stocking decisions are taken. As the researcher Cornelia Staritz (2011) has put it in a World Bank study (in the context of clothes retailing):

> One of the most influential trends in sourcing is the increasing importance of time factors in sourcing decisions. This is related to the shift to lean retailing and just-in-time delivery where buyers defray the inventory risks associated with supplying clothing to fast-changing, volatile and uncertain markets by replenishing items on their shelves in very short cycles and minimizing inventories. (p. 33)

She goes on to quote the CEO of a (UK) retailer:

> Speed to market is last year's news: it is a significant factor for success but it is no longer "the new thing". It is just part of the normal way of retailing. You just have to get things from concept to shelf in a shorter time than before… It's a cultural shift for companies. (ibid.)

The days when retailers would look to introduce new stock on a seasonal basis (for example, a spring and autumn collection) have passed. Some fashion retailers, including most notably Zara, have developed an ability to respond within a few weeks

to changing trends. This effect can also be seen in other product ranges and areas of retailing: food retailers regularly monitor immediate weather forecasts, for example, to anticipate increased demand for, say, barbeque or picnic products.

The rapid acceleration of timelines in retailing is directly transferred on to suppliers upstream in GSCs, who have to be equally adroit in order to ensure they can increase or decrease production runs at short notice as requested, or gear up quickly for new products.

This trend has a direct effect on employment practices by GSC supplier firms, since it leads directly to a tendency towards a need for labour to be taken on or laid off at short notice. Excess overtime or short-time working, casual employment and other forms of precarious working are a consequence.

The use of part-time workers and temporary work by retailers for their own shops and businesses has been noted in the recent ILO report on the commerce sector (ILO, 2015a), which attributed this among other things to the degree of business variation in the sector. Very similar trends can be identified for commerce GSC suppliers, for similar reasons.

## 2.4 Key GSCs in the commerce sector

There are two particular GSCs which are significant both in terms of their size and importance and because commerce firms are frequently to be found in direct charge of them. These are the GSCs for clothing and fashion items (what is generally described as “apparel”) and for fruit, vegetables and other food items including fish. Any report on GSCs in commerce necessarily has to consider these GSCs particularly closely, not least because they can demonstrate considerable power asymmetry between supply chain members.

The growing development of GSCs in food items was the subject of an ILO report in 2007. This pointed to recent changes which had taken place:

> What was once, more often than not, a non-integrated supply chain arrangement which saw a product making its way step by step through a series of intermediaries and markets towards an eventual buyer has been transformed. Each stage of this food supply chain and value chain is now likely to be closely linked together, so that, from grower to buyer, the partners in the chain are aware of their role in a single process. (ILO, 2007, p. 3)

Since that report, the trend has continued. As a World Bank study in 2013 put it:

> Large supermarket chains are the leading actors in key fruit and vegetable markets, with controlling market shares across Europe and increasingly in the United States. These buyers, such as Sainsbury’s, Marks & Spencer, and Wal-Mart, seek enhanced competitiveness and consistency from the global supply chains… They exert significant influence over the entire value chain and dictate how fruit and vegetables are produced, harvested, transported, processed and stored. (Staritz and Reis, 2013, p. 16)

The growth in GSCs in food is, it has been suggested, a result of strategic as well as operational concerns by retailers. Supermarkets began to engage directly in fresh produce supply chains because they saw fruit and vegetables as one of the few product lines that could persuade consumers to switch from one supermarket chain to another (Gereffi, Humphrey and Sturgeon, 2005).

Another reason has been the need to improve food traceability, so that retailers know the full provenance of all items sold. This requirement follows in the wake of a number of contaminated food scandals, which in turn have led to tighter regulatory requirements. The term "phytosanitary" is used to describe the health requirements on plant and agricultural produce in the context of international trade, and the World Trade Organization's Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) is an international treaty in force since 1995 (ILO, 2007; Dolan and Humphrey, 2004).

It can be added that a similar development has been followed in floriculture (cultivation of cut flowers) for the European and North American markets.

The significance of GSCs in apparel in the commerce sector is even greater. In the words of the World Bank study already cited above: "The clothing industry is the classic example of a buyer-driven value chain that is characterized by decentralized, globally dispersed production networks, coordinated by lead firms who design, brand, and market the products they sell, but where the actual manufacturing is carried out by other firms" (Staritz, 2011, p. 26).

Four categories of lead firm have been identified in GSCs for apparel. Two are directly in the commerce sector. These are general retailers (including department stores, multi-goods supermarkets and discounters) and specialist clothing retailers. In the first group are major firms such as Wal-Mart, Kmart, Target, Sears, Macy's and J. C. Penney in the United States, and Asda, Tesco, Primark, Marks and Spencer, Galeries Lafayette, Carrefour, Karstadt and Kaufhof in Europe. Specialist clothing retailers include firms such as Gap, America Eagle, Abercrombie & Fitch in the United States, and Hennes & Mauritz (H&M), C&A, Benetton, Mango, New Look, Next, Arcadia and Zara (Inditex) in Europe (Staritz, 2011).

So-called branded marketers (companies such as Nike, Polo, Hugo Boss, Diesel and Gucci, which as lead firms in GSCs design and organize the manufacture of their own branded goods) and branded manufacturers (firms such as Levi Strauss, Sara Lee, Fruit of the Loom, Giorgio Armani, and Adidas who originally ran large in-house manufacturing plants but are now increasingly sourcing globally) form the remaining two categories of lead firm (Gereffi and Frederick, 2010; Staritz, 2011). Although branded goods are sold by third-party retailers, the major brands are also increasingly developing their own retail operations and are becoming effectively a type of quasi-retailer.

The global apparel industry was transformed by the removal in 2005 of the Multi-Fibre Arrangement, originally agreed in 1974, which had imposed a system of quotas (quantitative restrictions) on imported goods from developing countries to key import markets. The removal of quotas in 2005 (negotiated as part of the General Agreement on Tariffs and Trade in 1994) meant that global buyers were effectively free to source goods in any amount from any country, subject only to any applicable import tariffs. The end of the Multi-Fibre Arrangement has directly caused the rapid expansion of garment production in a number of countries, particularly in Asia; it has also caused decline in other countries.

## 2.5 Economic upgrading

The value created during the stages of a GSC is not shared equally with all participating firms. In relation to fresh vegetables produced in Kenya for the UK market, it has been suggested that the eventual price paid by the consumer is split between the different elements of the supply chain as follows (ILO, 2007; Best and Mamic, 2008):

Supermarket: 46%

Importer: 6%

Airfreight and handling: 21%

Packaging: 13%

Grower: 14%

A similar exercise has been undertaken in the apparel trade for a T-shirt manufactured in Bangladesh and sold in Europe (CCC, 2014b):

Retailer: 59%

Brand profit: 12%

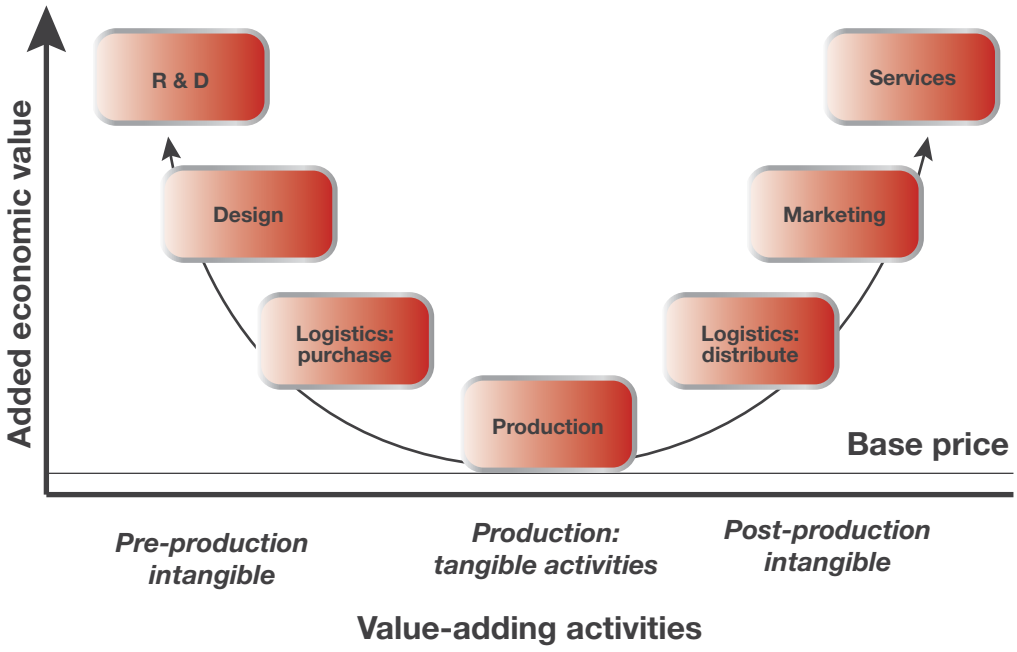
Material cost: 12%

Transport costs: 7%

Manufacturing: 10%

Exact percentages may vary between items but these figures reflect the broad split which applies between supply chain partners. Most value is added at early (R&D and design) and later stages of GSCs. This can be represented graphically (figure 2.3), a curve which because of its shape is sometimes described as a "smile curve".

**Figure 2.3: Value creation in global supply chains**




Source: OECD, 2011.

For companies (and countries) engaged in production and other low-value parts of the chain, the aim is to move towards delivering higher value-added work, a process known as economic upgrading. Upgrading has been defined as "the capacity of a firm to innovate to increase the value added of its products and processes" (Giuliani,

Pietrobelli and Rabelloti, 2005, p. 550). Academic writers have distinguished four types of economic upgrading: product upgrading (producing more sophisticated items); process upgrading (better organization of production, new technologies, etc.); functional upgrading (moving upstream or downstream into higher value-added areas); and chain upgrading (switching to completely new, higher value, GSCs) (OECD, 2013; Cattaneo et al., 2013; Park, Nayyar and Low, 2013).

In both the apparel and fresh fruit/vegetable GSCs, we can see examples of this economic upgrading process at work. In fruit/vegetable GSCs, researchers have noted the shift beyond simple production into packing and cold storage in countries, such as Honduras and Kenya. Chile has moved further still up the value chain by developing a food processing industry (Cattaneo et al., 2013).

In garment production, the most basic manufacturing process is described in the trade as "cut and make", or "cut, make and trim" (CMT). By contrast, own equipment manufacture (OEM) offers a wider range of production capacities, including limited design, warehousing and upstream sourcing (such as sourcing fabric or organizing dyeing). One of the recent trends noted in, for example, the Bangladesh textile industry has been the gradual shift from low-value CMT work into OEM production.

Beyond OEM is a further level of sophistication known as own design manufacture (ODM). ODM manufacturers carry out all parts of the production process, including key design functions, enabling much greater control over ordering input supplies. ODM manufacturers capture significantly more of the value-added during the apparel GSC (Pickles, 2012).

We can note that many retailers have themselves sought to capture more of the value created in the supply chain by undertaking directly their "own label" production. In many cases this expansion started with commodity products but has sometimes also extended to branded goods.

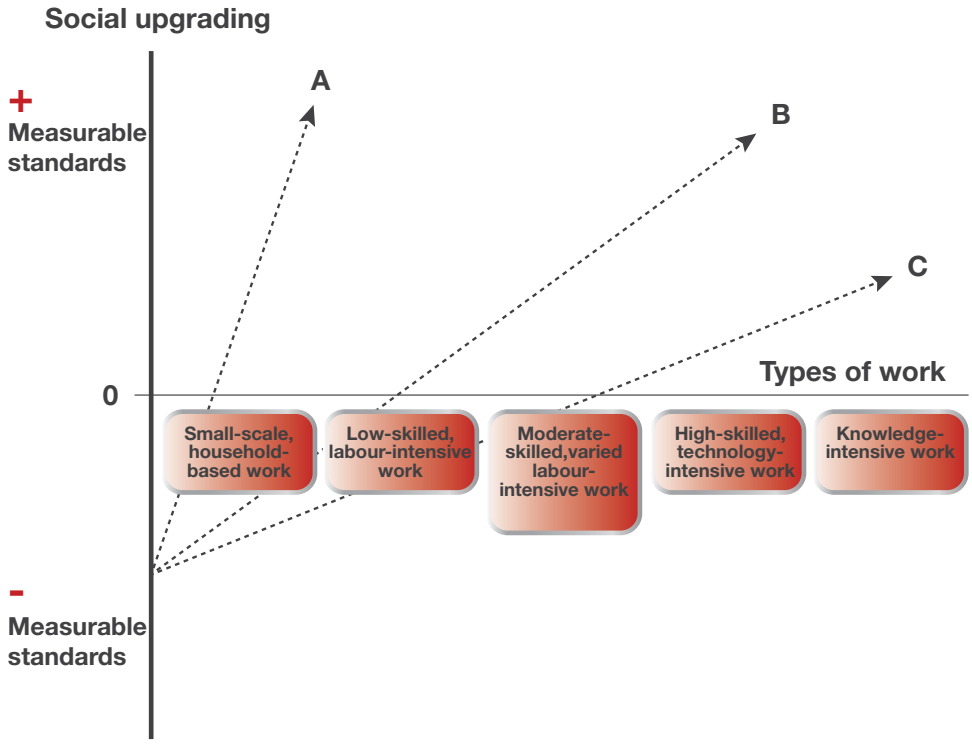
## 2.6 Social upgrading

Social upgrading is understood to mean the improvement of working conditions and the creation of higher-skilled, better-paid jobs (Staritz and Reis, 2013; TUAC, DGB and ITUC, 2015). International trade union organizations in a submission made to the 2015 G7 meeting defined it as "the process of improving workers' rights, living standards, wages, working conditions, social protection and gender equality" (TUAC, DGB and ITUC, 2015, p. 6, no. 6.25).

A recent World Bank study reports that empirical evidence suggests that economic upgrading can also lead to social upgrading, though it adds that this is not automatic (Taglioni and Winkler, 2014). It advises that "there is a role for complementary policies to promote social upgrading and maximize the sustainable development impact of [global value chain] activities" (p. 7).

If it is true that economic upgrading does not necessarily promote social upgrading, it is also possible that social upgrading can take place without a concomitant process of economic upgrading. This has been represented in graphic form by Gary Gereffi and Xubei Luo (figure 2.4).

**Figure 2.4: Different pathways to social upgrading**




Source: Gereffi and Luo, 2014.

As Gereffi and Luo explain (pp. 13–14):

> Pathway A depicts a situation in which no significant economic upgrading has occurred. Instead risks to workers were reduced because of deliberate actions that introduced enforceable standards… Alternatively, social upgrading can occur along Pathway C, where almost the entire burden is borne by economic upgrading.

Pathway B offers an intermediate route. We shall look in more detail at different routes to social upgrading, and examples of economic and social upgrading being linked, later in this report.

# 3. Implications of retail commerce GSCs for decent work

GSCs in commerce, and particularly in relation to fashion goods and clothing, have come under considerable scrutiny over the past ten years. Retailers and clothing brands have seen their supply chains closely examined by consumer campaigns, non-governmental organizations (NGOs) and trade union bodies in a way which has not been the case to the same extent in other sectors.

The commerce sector can therefore be seen as being at the very heart of debates over GSCs and decent work.

Headline issues which have been raised include the degree of control (or lack of it) by lead firms in the supply chains; the poor wages paid by suppliers; poor employment conditions in suppliers' factories; poor practice in relation to workers' freedom of association; and poor, in some instances shocking, examples of occupational safety and health practice, typified by the collapse of the Rana Plaza factory in Bangladesh in 2013 which killed more than 1,100 people.

## 3.1 The significance of gender

Gender is a significant aspect in GSCs for the commerce sector, with women over-represented in the production and post-production stages of both the apparel and fruit/vegetable supply chains.

For example, it has been estimated that 70 per cent of the four million or so garment workers in Bangladesh are women. In horticulture, the World Bank records significant female participation in the workforce in many developing countries, both in the production stage and in packing and storage where it suggests women's participation rate is between 70–80 per cent of the total workforce. Processing in, for example, Zimbabwe and Mexico has over 85 per cent female participation (Staritz and Reis, 2013).

Interestingly, the over-representation of women in commerce GSCs is also present at the end of the supply chain, when the goods produced are purchased. The majority of retail consumers (over 70 per cent in the United States) are women (Christian, Evers and Barrientos, 2013).

Given the unequal treatment of women in relation to men in work and employment, the gender dimension to commerce GSCs is of considerable importance in moves towards decent work and should be seen as an underlying theme to this report.

## 3.2 Commerce GSCs and employment creation

There has been considerable growth in employment in a wide number of countries as a consequence of the development of GSCs in commerce, although there have also been negative consequences for employment in other countries.

Taking the example of the apparel trade, the period after the ending of the Multi-Fibre Arrangement has seen significant changes. Table 3.1 compares employment in the apparel sector in 2004 and 2009 and demonstrates clearly how countries such as Bangladesh, China, India and Viet  Nam have benefited; conversely, other countries such as the Dominican Republic and Mexico have suffered job losses.

**Table 3.1: Employment in the apparel sector, selected countries, 2004 and 2009**

| | 2004 | 2009 | % change |
|---|---|---|---|
| Bangladesh | 2 000 000 | 3 100 000 | 55.0 |
| Viet Nam | 498 226 | 758 274* | 52.2* |
| China | 3 202 600 | 4 493 100 | 40.3 |
| India | 447 466 | 622 913* | 39.2* |
| Nicaragua | 40 940 | 51 850 | 26.7 |
| Mauritius | 59 691 | 42 355 | -29.0 |
| Kenya | 34 614 | 24 359 | -29.6 |
| Mexico | 482 396 | 289 351 | -40.0 |
| South Africa | 99 558 | 49 698 | -50.1 |
| Dominican Republic | 131 978 | 41 285 | -68.7 |
| India | 2.0 | Rest of the world | N/A |

Source: Bernhardt, 2013. An asterisk denotes data for 2008.

Developed countries have also seen textile manufacturing job losses at home. The jean-maker Levi Strauss received considerable criticism when it announced in 2003 that it was closing its remaining US factories, although the firm now claims 14 US factories among its suppliers. In the United Kingdom, Marks and Spencer was one of the last British companies to produce its clothes entirely in Britain, a policy it felt compelled to change at the turn of the century.

In the years since 2009, the garment industry has increased further in importance in the Asian economy. Total numbers working in the sector, and key economic data, are given in table 3.2 for the most important garment-producing countries.

**Table 3.2: Garment production in Asia, selected countries, 2008–13**

| | Number of garment workers | Garment industry as % of exports | Garment industry as % of GDP | % of world market |
|---|---|---|---|---|
| Bangladesh | 3.6 million | 76 | 7 | 6.5 (2011) |
| Cambodia | 500,000 | 95 | 13 | 1.2 (2008) |
| China | 3-4 million | n.a | 7 (2011) | 38.8 (2008) |
| India | 6 million | 14 | 4 | 3.6 (2008) |
| Indonesia | 1 million | 3 | 9 | 1.6 (2013) |
| Sri Lanka | 283,000 | 39.9 | 7 | 1.1 |

Source: CCC, 2014a.

The global market in apparel is continuing to evolve in quite dramatic ways. In the past few years, new countries are beginning to make their mark as centres for garment production. One example is Ethiopia, where the Government has established the Ethiopian Textile Industry Development Institute and has highly ambitious plans to develop this sector in the period until 2020. Interestingly, some of the investment in Ethiopia is coming from Bangladesh, where the textile industry is now in a position to export its expertise.

The emphasis by some lead firms in commerce GSCs to keep costs as low as possible and their ability to switch their suppliers extremely quickly brings with it the real risk of a race to the bottom, with all the pressures on employment and working conditions and wage rates that this implies. As labour standards begin to improve in established centres of production, some voices are already being heard expressing fears that improved wages and conditions could prove uncompetitive.

Since a better educated and more skilled workforce is one of the prerequisites for achieving economic and social upgrading, one approach to combatting the downward pressure is to invest in education and training. As the World Bank study *Global Value Chains in a Postcrisis World* put it:

> Education and training opportunities will help to overcome the skills deficits that could hinder economic upgrading… Maintaining or improving a country's position in the global apparel [value chain] requires a continuous dedication to workforce development by the government and local firms. In the long run, innovative capacities depend on suitable human capital. (Cattaneo, Gerefii and Staritz, 2010, p. 186)

A number of examples from the commerce sector of effective investment in education and training are highlighted later in this report.

## 3.3 Guaranteeing rights at work

A television exposé in 2000 made by the British Broadcasting Corporation alleged that children were working in a Cambodian factory making sportswear for the western market. The TV programme (BBC, 2000) included an interview with one child, reportedly 12 years old, who claimed to have had to start work against her will because of her family's poverty. The programme popularized the issue of child labour in commerce GSCs and also had the direct effect of sensitizing retail and brand firms to the reputational risks involved and the need to address this issue. Among other things, the publicity generated also helped stimulate the creation of the Better Factories Cambodia initiative coordinated by the ILO.

Fifteen years on, the fact that there is less focus by campaigning bodies on the issues both of child labour and of forced labour in apparel GSCs suggests that lead firms and suppliers have successfully taken steps to remedy past bad practice. The European-based Clean Clothes Campaign, in a report otherwise strongly critical of factory audits, nevertheless suggested that audits were having some positive effect in relation to child labour and forced labour (CCC, 2005). Two researchers writing on the Bangladesh apparel GSCs stated in 2014, "it needs to be mentioned here that all the RMG [ready-made garment] factories of Bangladesh are free from child labour. This is also an outcome of pressure exerted by the buyers in the mid-1990s" (Ahmed and Nathan, 2014, p. 17).

Nevertheless, complacency should perhaps be avoided. It has been suggested that the production of hand-embroidered garments in India, frequently carried out at home, can often involve child labour (ibid.). In 2014, another UK television documentary claimed to find girls as young as 13 working up to 11 hours a day on products destined for UK retailers, despite this being illegal under Bangladeshi employment law (Daily Star, 2014).

In relation to the GSC for tuna, which has been investigated on several occasions by the Finnish NGO Finnwatch, concern has been raised about the trafficking of workers associated with the fishing and fish canning industry in Asian countries, including Indonesia, Malaysia and Thailand. Finnwatch says that tuna from the companies it has investigated is on sale in almost all Finnish food stores, as well as in retailers in Belgium, Slovenia, United Kingdom and the Baltic States. It suggests that companies exporting tuna to European markets have begun to take steps to identify forced labour, although it also warns that these measures "are insufficient to identify and address possible human rights violations, including forced labour, in their supply chains" (Finnwatch, 2015, p. 18).

Harassment of workers is particularly associated with attempts to discourage them from organizing collectively. One Indian NGO claimed that "most extreme is the presence and posting of criminal elements in and around factories as a warning to workers not to raise their voices. It is clear that under these conditions the right to organise is reduced to a farce" (National People's Tribunal, 2012, p. 10).

A detailed report published jointly by the Norwegian NGO Framtiden i våre hender and the Indian NGO Cividep looked in detail at conditions in three garment factories in India. In one, the report claimed,

> supervisors and production managers allegedly intimidate the workers and humiliate them publicly to pressurize them to achieve high targets… Whenever workers have raised a demand or a complaint regarding working conditions, the company viewed these as unionization attempts and therefore a threat to the company. Allegedly, those workers who initiate discussions on better working conditions are victimized, threatened and dismissed from work. (Parakuni et al., 2015, pp. 45, 48)

Campaigners also give examples from Bangladesh and Cambodia where they allege that workers active in a trade union or attempting to organize a union have been subject to violence and intimidation (CCC, 2014a).

The harassment faced by workers in asserting their right to freedom of association is one of the abuses most frequently raised in connection with commerce GSCs in clothing goods. The instigation by some manufacturers of factory committees independent of established trade unions has also been subject to criticism. However, some GSC lead firms are proactively working to encourage freedom of association and collective bargaining in the factories they use to source goods, a topic we shall return to later in this report.

Sexual harassment has also been reported. "Male managers abuse younger girls who they think are not working fast enough and exhausted staff are told they must work all night to get out a big order. They are threatened with beatings or the sack if they don't comply," one Bangladesh newspaper paper claimed last year (Daily Star, 2014). Research into the issue of sexual harassment in particular has been the subject of a

detailed ILO Better Work discussion paper, *Sexual Harassment in Garment Factories* (Truskinovsky, Rubin and Brown, 2014).

Some of the worst examples of poor practice in relation to rights at work are to be found not in firms directly integrated into apparel GSCs, but in the subcontractors they use as and when needed to provide extra capacity. These, the marginal producers whose output is most likely to be cut and whose workers enjoy the least security of employment, have been described by the United Nations Conference on Trade and Development (UNCTAD) as "pop-up" suppliers (UNCTAD, 2013, p. 159). They are the firms that GSC lead firms may have most difficulty in monitoring.

## 3.4 Wages, employment conditions and social protection

The low level of wages paid to workers in developing countries for the work undertaken for global GSCs in the commerce sector has been the focal point of criticism raised by unions and campaigning bodies.

The argument is that wage levels are kept down because some retailers are driven solely by the desire to keep the cost of their supplies as low as possible. UNCTAD's World Investment Report 2013 maintains that "Buyer-driven [global value chains] are typically focused on reduced sourcing costs and in many labour-intensive industries this means significant downward pressure on labour costs" (p. 162). Furthermore, there can be pressure as contracts are renegotiated for costs to be reduced yet further.

Some see wage levels and working conditions as a systemic issue for GSCs. A recent academic paper claimed that "labor violations are not simply a factory-level problem that can be corrected by improved compliance monitoring, they are a pervasive outcome in an industry dominated by lead firms whose business model is predicated on outsourcing apparel production via highly flexible, volatile and cost-sensitive subcontracting networks" (Anner, Bair and Blasi, 2014, p. 3).

The same paper pointed to the unequal power relationship between global commerce companies and individual suppliers, and the fact that price negotiations may well be uncoupled from the actual costs of production (ibid.; see also UNI Global Union, 2012). For contractors, particularly those engaged in simple CMT operations in apparel production, the majority of their business supply costs (including material supplies and energy costs) may be outside their control; perhaps the only cost over which they do have direct control is the cost of labour (Anner, Bair and Blasi, 2012). In this situation, pressure to cut prices immediately translates into pressure to cut wages (UNCTAD, 2013).

One very relevant issue is that neither the GSC lead firm nor the garment manufacturer may necessarily know the actual time taken by workers to produce a particular garment, and therefore the part of the garment cost directly attributed to the labour input. One product development manager in the fashion trade has described the sort of negotiating technique adopted by some lead firms' buyers as follows: "You made that shirt for $2 – make this one for $1.90. Very little science goes into the negotiation and certainly 90% of companies that work this way will not give a toss on what the labour rates are in the factory, as long as the external audits do not put them under the country laws of paying the 'minimum wage'" (Miller, 2013, p. 13).

Professor Doug Miller of the UK's University of Northumbria has called for what he describes as a sustainable labour costing approach in apparel GSCs. He points out that the traditional approach of buyers is to focus on the ex-factory price of goods (the freight on board (FOB) price), rather than breaking down production costs to include actual labour costs. He proposes instead an approach which identifies labour costs by using commercially available data on garment production times, the so-called "standard minute values" (SMVs) (in the United States, 'standard allowed minutes'). SMVs are calculated by reference to the rate of output which qualified workers will naturally achieve without overexertion as an average over the working day or shift.

Miller argues that an approach focused on SMVs for garments would enable labour costs to be ring-fenced, and therefore potentially taken out of contract negotiation: "Ring-fencing the labour cost would force the supplier to address the issue of how the factory is operating, since the basic minimum wage would be the same regardless of factory efficiency" (ibid., p. 18).

Currently a small number of retailers (including Asda, Marks and Spencer, Pentland, Primark and Tchibo) have chosen to take a lead by working to calculate the labour cost for each product they source. The Swedish-based multinational H&M is also moving in this direction (CCC, 2014b). Steps such as this require coordination between companies' CSR teams and their supply chain buyers; an identified issue in some firms is that these two areas of a corporation's business operations are not adequately integrated.

NGOs and unions campaigning on GSCs claim that, even with national minimum wage rates set by governments in all the major centres of apparel manufacture in Asia, wages paid remain far below living wage levels. The campaigning body Asia Floor Wage Alliance, by seeking to calculate living wage levels based on purchasing power between countries, has the ultimate aim of taking wages out of competition not only within but also between countries.

Some retailers (although a minority) have publicly pledged to work towards ensuring that workers in their GSCs are paid living wages. H&M has made the straightforward commitment that it is willing to pay more so that suppliers can pay higher wages. It is working to pay a "fair living wage" ("an amount that can cover a worker's basic needs") to some 850,000 workers by 2018, and has initiated pilot projects in "role model factories" in Bangladesh and Cambodia (Parakuni et al., 2015, p. 32).

Approaches such as these suggest a desire by retailers to develop a participative rather than adversarial approach to partner firms in GSCs, in line with ECR theory. However, if GSC lead firms are prepared to pay more to ensure better employment practices, there have to be mechanisms in place to ensure that these higher payments to contractors do indeed get reflected in higher wages. Marks and Spencer's Head of Ethical Trading has discussed the practical difficulty of trying to pay higher wages to individual workers working on its garments when alongside these workers in their factories may be other employees working for other GSC lead firms with no such policy in place. Besides, workers themselves may be switched by their managers between different supply chain contracts (Northumbria University, video, n.d.) The lesson would seem to be that moves to raise wage levels have to be undertaken by concerted initiatives, preferably by collective bargaining.

Excessive overtime has been identified as a particular issue, one which may have systemic roots in the nature of the garment industry where buyers are increasingly placing orders at very short notice to meet seasonal and fashion changes. In one

Indian factory, workers reported that they were obliged to work for 10 to 15 days at a stretch, the work apparently being driven by the necessity to complete orders (Jiang and Milberg, 2013). While excessive overtime could be the result of poor management by manufacturers, it also seems to be the result of unthinking practice by some GSC lead firms.

False recording of hours worked and pay earned has been reported by one NGO: "The factory keeps two sets of wage records. The falsified one shows the number of working hours, which is never above 102 per month. The workers need to sign their names on both wage records" (CCC, 2005, p. 24).

In terms of occupational safety and health (OSH), the 2013 collapse of the Bangladeshi textile factory Rana Plaza with its terrible toll of death and injury can be seen as symbolizing the extremely limited attention given to this by some companies participating in global commerce GSCs. At Rana Plaza workers were aware that the building had become unsafe but were effectively obliged by employers to re-enter the building and resume their work on the day it collapsed.

Previous to Rana Plaza there had been a string of fatal incidents in garment factories in Bangladesh, including the collapse of the Spectrum factory in 2005 in which 64 died, and of the Phoenix building in 2006 which killed 22. A list of recent factory fires in the country would include KTS Textile (61 dead, 2006), Sayem Fashions (3 dead, 2006), Garib and Garib (21 dead, 2010), That's It Sportswear (29 dead, 2010), Eurotex (2 dead, 2011) and Tazreen Fashion (117 dead, 2012). The Bangladesh Fire Department has reportedly recorded 213 factory fires between 2006 and 2009, between them causing the deaths of 414 garment workers.

Incidents of this kind are not limited to Bangladesh. In September 2012, over 260 workers in an apparel factory in Karachi lost their lives in one of Pakistan's worst fires. The four-storey factory had only one open door at the ground floor, and lower floor windows were barred (Pickles, 2012; CCC, 2012).

The lack of adequate emergency exits from factories, and more particularly the fact that for security reasons fire exit doors can be locked from outside, has been reported. Some campaigning groups claim that fire exit doors are opened only when factories are being subject to audits, and are locked once the inspectors have left (CCC, 2005).

The Accord on Fire and Building Safety, signed by social partners following the Rana Plaza collapse (and discussed in more detail below) marks a very important step forward in tackling unsafe factory premises. The Accord's aim is given as "to make the ready made garment sector in Bangladesh safe and sustainable" (Bangladesh Accord Foundation, 2015, p. 1).

A more particular OSH concern in relation to apparel GSCs relates to the way that the denim for fashion jeans is artificially distressed. To achieve the pre-worn look, sandblasting, hand sanding, chemical spraying and other techniques have been employed. Manual sandblasting, using an air gun, has been associated with severe respiratory problems for workers caused from inhaling small silica particles; long-term exposure, it has been argued, could lead to silicosis and lung cancer.

The Turkish Government introduced a national ban on the use of sandblasting in 2009 and the following year, in response to a global campaign, over 40 major denim brands publicly banned the use of sandblasting. However, a group of NGOs has claimed, in reports published in 2012 and 2013, that the practice has been continuing in Bangladesh and China (CCC et al., 2013).

Occupational safety and health concerns have also been raised in connection with GSCs in fruit, vegetables and other food products. The Good Practice Handbook published by the International Finance Corporation claims that "the principal causes of work-related incidents or fatalities in agro-commodity production are exposure to hazardous agro-chemicals, crushing and use of unsafe equipment, noise, heavy loads, extreme temperatures, road incidents, and limited access to personal protective equipment" (IFC, 2013, p. xii).

One study, looking at the particular GSC which links Costa Rica banana growers and UK retailers, drew particular attention to the risk posed by agro-chemicals:

> The application of fungicides, pesticides and herbicides is very much part of the banana production process, but due to the number and volume of chemicals that are required, the application process often occurs while workers are operating nearby. Some of the chemicals are applied overhead by plane, and as many as two spraying operations will occur in a week. Considering the plantation operates six days a week, this offers little scope for workers engaged in the field to avoid being present when aerial spraying takes place. (Robinson, 2010, pp. 567–8)

Training initiatives to improve workers' pesticide handling techniques have been reported in several countries, including Kenya and Morocco. This training may also include improving literacy skills, so that pesticide labels can be understood by the individuals who are using them (Psilos and Gereffi, 2011).

# 4. Commerce GSCs and decent work: Responses and initiatives

## 4.1 The challenges to overcome

For more than fifteen years, multinational corporations, trade union organizations, governmental bodies, NGOs and consumer organizations have been trying in different ways to encourage measures to tackle abuses in commerce GSCs. Despite all these efforts and considerable expenditure, it is hard to deny that major problems remain. Many of those working in GSCs are a very long way at present from enjoying decent working conditions.

Retailers include a number of major multinational companies which have demonstrated a strong commitment in principle to CSR initiatives (including a commitment towards employment issues relating to their supply chains) and which are undoubtedly concerned to try to address these issues. They are joined by a second group of retailers who, if perhaps not quite so motivated, have a strong understanding of the importance of tackling abuses, if only to guard against reputational risk. Both groups of retailers are in danger of being undercut by a third group, those concerned almost exclusively with ensuring their products have low prices.

Retailers also face an organizational issue, in that the staff they employ in demand planning and forecasting, and the staff engaged in supplier relations and supply chain management, operate usually quite independently of those employees who have a

particular CSR responsibility and therefore are directly concerned with employment issues in the supply chains. In other words, the familiar organizational problem of silo working can apply.

The head of ethical trading for one leading European retailer has suggested that the first step in tackling GSC abusive practices is to "engage with buyers in your own organization". She also talks of the importance of obtaining direct support from the company's board of directors, so that there is high-level buy-in towards initiatives being taken (Northumbria University, video, n.d.). Action on GSC issues has to be mainstreamed within a business organization if CSR and other specialist staff are to have the support they need to operate effectively.

## 4.2 The limitations of current practice

Steps taken up to now have been based primarily on voluntary supply chain governance, through audits designed to achieve compliance with voluntary codes of practice. Many observers, including some from within the business community, have now begun to question the sustainability of this route.

This is particularly the case for apparel GSCs, where a complex set of sometimes competing standards frameworks have been developed to oversee supply chain relationships as they affect labour issues. Some are multi-stakeholder initiatives, engaging NGOs, unions and consumer bodies as well as corporations. These include the Fair Wear Foundation (originally a Dutch initiative and almost exclusively brands), the Fair Labor Association (primarily United States), Social Accountability International (United States and Europe) and the Ethical Trading Initiative (originally United Kingdom). The Worker Rights Consortium emerged from a US campus campaign regarding the sourcing of university branded goods. These organizations tried unsuccessfully to work towards a single set of standards in the early years of this century.

Unlike these multi-stakeholder bodies, other framework bodies have been developed by corporations only. The two most significant bodies are Worldwide Responsible Accredited Production (WRAP) in the United States and the Business Social Compliance Initiative (BSCI), which is pan-European. With the exception of WRAP, the voluntary governance frameworks refer explicitly (to a greater or lesser extent) to ILO labour standards. WRAP's twelve principles are, it says, based on generally accepted international workplace standards, local laws and workplace regulations (WRAP, n.d.)

Retailers are represented particularly in the Ethical Trading Initiative, the Fair Labour Association and the Business Social Compliance Initiative (table 4.1).

**Table 4.1: Selected retailer (and brands with retailing interests) members of the Fair Labor Association, Ethical Trading Initiative and BSCI**

| | |
|---|---|
| Fair Labor Association | Barnes & Noble, H&M, Hugo Boss, Mountain Equipment Cooperative (Canada) |
| Ethical Trading Initiative | Asda, Sainsbury's, Marks & Spencer, Co-operative Group (United Kingdom), John Lewis, River Island, Debenham, Inditex, Mothercare, Primark, C&A, Monsoon, Gap, Next |
| BSCI | Aldi-Nord, Aldi-Süd, Auchan, British Retail Consortium, C&A, Carrefour, Coop (Denmark), Coop (Sweden), Coop (Switzerland), Etam, Inditex, Intermarché, Karstadt, Lidl, Migros |

Sources: Company and association websites.

Compliance with the various codes of practice is evaluated to a very large extent through the medium of factory audits. Tens of thousands of audits take place each year, and an industry has grown up to meet this business opportunity. Audits can be as short as a half-day visit or can last several days. Individual factories with several customers may face a plethora of audit visits, each being undertaken on behalf of a separate company. As UNCTAD has pointed out, this can "place a burden on suppliers who are often the subject of frequent (sometimes weekly) inspections from multiple customers" (UNCTAD, 2013, p. 163).

The audit process has come in for considerable criticism from those campaigning on GSC issues. Several studies have found examples of management trying to mislead auditors. One worker at a factory in China supplying US retail brands claimed that "the workplace would be cleaned up, the first aid box at the workplace which is locked up at normal times would be unlocked for auditing, the supervisors would give briefings to workers about how they should answer questions" (CCC, 2015, p. 21). Another, working in Kenya for a factory supplying a very large US retailer, claimed, "You always have to lie for the sake of helping the company get the orders otherwise if we were to tell the truth we would never have any orders and that would mean the end of our jobs" (ibid., p. 45).

Auditors have been criticized for adopting a "tick-box" approach which encourages a focus on the physical aspects of the factories rather than issues such as harassment, lack of freedom of association, and gender issues. The fact that factories such as Tazeen Fashion and Rana Plaza had been subject to audits before the disasters of 2012 and 2013 is also used to criticize the audit concept.

A more substantive critique of audits has also been made recently, as in this statement from the Clean Clothes Campaign: "Commercial auditing largely outsources the responsibility for social compliance to suppliers, and fails to take purchasing practices on the buyers' side into account" (CCC, 2014b, p. 10).

While some corporations would acknowledge that the audit system has significant weaknesses, they nevertheless point to the value which audits can have in identifying non-compliance. The head of ethical trading for one retailer was reported recently as saying, "The landscape is changing in compliance. We know auditing is limited in its effectiveness, but will continue to evolve" (Russell, 2015).

## 4.3 Towards fully functioning social dialogue

Some observers have suggested that there are lessons from history to be learned in helping move forward towards effective industrial relations in commerce supply chains. Here once again most focus has been on apparel GSCs, not least because textiles played a very significant role in the early industrialization of countries, such as the United Kingdom and United States.

The textile industry in the United Kingdom had by the later nineteenth century a fully-functioning social dialogue between employers' bodies and trade unions, including an agreed set of wages lists (set wages for set work) which operated in almost all factories engaged in cotton spinning and weaving in northern England and successfully removed labour costs from inter-firm competition. In the United States, as a recent academic paper on apparel GSCs has pointed out, in the 1920s the International Ladies Garment Workers Union negotiated collective agreements not only with manufacturers but also with the buyers (the "jobbers"). According to this study, jobbers agreements institutionalized the principle of buyer liability in three specific ways. First, they prevented contractors from competing on labour costs by negotiating wages directly with the jobber. Second, they stabilized and consolidated subcontracting relationships by requiring jobbers to register their designated contractor with them. Third, they made jobbers directly liable for certain labour costs beyond wages (Anner, Bair and Blasi, 2014). The authors suggest that a similar approach is needed today to bring supply chain lead firms into formal collective bargaining frameworks. This suggestion has been refined by the academic Dev Nathan, who talks of potentially moving from tripartite to quadripartite social partnership, by bringing in the buyers: "On the institutional side, in the discussions on wages and working conditions, buyers are not represented. What exists is a tripartite mechanism, with representatives of employers, workers and the government. This tripartite structure obviously leaves out one key player, the buyers" (Nathan, 2013). In fact, talk of quadripartite structures in this context may be premature in that tripartism could satisfactorily be extended to see those firms with indirect as well as direct employment responsibilities represented on the employers' side.

The International Textile, Garment and Leather Workers' Federation (now part of IndustriALL) called in 2007 for a move towards "mature systems of industrial relations" in the governance of apparel GSCs, an approach which stressed the importance of developing freedom of association and collective bargaining, and which foresaw a shift from social auditing to one where factory conditions were regulated through social dialogue. This approach stressed the primacy of the employment relationship in combatting the abuses of the present system of supply chain governance (Miller, Turner and Grinter, 2011).

In this context, it is relevant to note that the ILO Global Dialogue Forum on Wages and Working Hours in the Textiles, Clothing, Leather and Footwear Industries in 2014 included the following among the Points of Consensus agreed: "Production in the TCLF [textiles, clothing, leather and footwear] sector is truly globalized and therefore social dialogue can profit from participation of international actors, such as buyers" (ILO, 2014).

## 4.4 The Bangladesh Accord

For international trade unions, the Accord on Fire and Building Safety in Bangladesh represents a significant step towards strengthening social dialogue, because it entails commitments by multinational enterprises that are legally enforceable. The Accord, while focused on apparel, is seen by unions as a possible model for other GSCs.

The Accord is a five-year agreement signed in May 2013 between over 200 retailers and brands, the global unions IndustriALL and UNI Global Union and eight Bangladeshi trade unions. The vast majority of major European retailers together with some US retailers are represented.

The Accord includes a binding and legally enforceable dispute resolution process, independent inspections, full declarations of suppliers used, training and participation of workers in health and safety and long-term sourcing arrangements. The arbitration process provided for in the Accord is the same process used to arbitrate on commercial contractual commitments made between lead firms and their GSC business partners (TUAC, DGB and ITUC, 2015; Bangladesh Accord Foundation, 2015).

Some, primarily US, commerce companies have chosen to participate instead in the Alliance for Bangladesh Workers Safety, which does not include the legally enforceable element of the Accord. It should also be noted that some firms have not committed to either the Accord or the Alliance.

While the Accord is seen from a trade union perspective as prefigurative of improved industrial relations in GSCs, a senior government figure in Bangladesh has recently raised concerns that both it and the Alliance could potentially threaten Bangladesh's competitive position in the global apparel market (Daily Star, 2015). Concerns such as his could perhaps best be met by moves to extend the sort of measures introduced in Bangladesh to other apparel manufacturing countries.

## 4.5 Global framework agreements

A small number of global framework agreements/international framework agreements (GFAs) have been signed between commerce multinationals and global union federations.

IndustriALL Global Union signed a revised GFA with Inditex, the company which operates the Zara chain of shops and is one of the world's largest fashion retailers, in 2014. According to the union, "the collaborative agreement sets out to ensure the effective application of International Labour Standards throughout Inditex's supply chain including those workplaces not represented by IndustriALL trade unions" (IndustriALL, 2014). The agreement, renewed following an earlier GFA in 2007, is believed to be the first to formally cover a retail supply chain. It also recognizes IndustriALL as the union counterpart in the company's CSR activities. Inditex has separately negotiated a GFA with UNI Global Union, committing to the implementation of fundamental labour rights and decent work for the company's own retail and other employees.

UNI Global Union and Carrefour signed a GFA in 2000, under which the retailer committed among other things "to ensure that the principles established by the ILO are respected by its suppliers" (Carrefour and UNI Global Union, 2000). It is understood

that this early agreement may soon be replaced by a new agreement, which is expected to cover supply chain contractors in more detail.

UNI Global Union also has a GFA in force with H&M, based on the eight fundamental ILO Conventions Nos. 29, 87, 98, 100, 105, 111, 138 and 182 (covering forced labour, child labour, freedom of association, collective bargaining, equal remuneration and action against discrimination).[1] The GFA describes the ILO Declaration on Fundamental Rights at Work (1998) as one of the cornerstones of cooperation between the two social partners. It also supports the UN Global Compact and the OECD Guidelines for Multinational Enterprises (H&M and UNI Global Union, 2004).

A further GFA has been signed between one of the biggest international retail companies Metro AG/ Group and UNI Global Union.

IKEA and the Building and Wood Workers' International BWI signed a GFA in 2001 which references two IKEA policy documents, a statement on preventing child labour and the IKEA Way on Purchasing Home Furnishing Products. This latter document requires IKEA suppliers to comply with the eight core ILO Conventions. Suppliers are instructed, among other things, to provide a safe working environment, to pay at least the minimum legal wages, not to use child labour or forced labour, not to discriminate, and not to prevent workers associating freely.

In relation to food GSCs, a GFA was signed in 2001 between the major banana brand Chiquita and the foodworkers' global union IUF and COLSIBA (the Coordinating Body of Latin American Banana and Agro-industrial Unions). The agreement, signed in Geneva, was witnessed by the then ILO Director-General Juan Somavia.

Negotiations are also progressing for a GFA between another leading international retailer and both IndustriALL and UNI Global Unions, which is expected to be announced shortly. This will be the first single GFA agreed with both UNI and IndustriALL.

Because of their nature as global agreements, there has been criticism that GFAs lack the mechanisms to ensure local compliance. Some have suggested that GFAs struggle to tackle supply chain issues. Nevertheless, more recent GFAs have tended to be more comprehensive in relation to employment rights and conditions at suppliers' and contractors' premises. It is interesting that UNI, as the global union for the service sector, sees its responsibility in the GFAs it negotiates as extending beyond retailing into upstream supply chain matters.

## 4.6 Tripartite international initiatives

The ILO has partnered with the International Finance Corporation (IFC) to develop the Better Work initiative, which now operates in Bangladesh, Cambodia, Haiti, Indonesia, Jordan, Lesotho, Nicaragua and Viet Nam. In each country, programmes are established as partnerships with the national stakeholders of government, employers and trade unions with a tripartite national Project Advisory Committee established in each country. Factories which sign up for the Better Work scheme are able to call

1 Forced Labour Convention, 1930 (No. 29); Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87); Right to Organise and Collective Bargaining Convention, 1949 (No. 98); Equal Remuneration Convention, 1951 (No. 100); Abolition of Forced Labour Convention, 1957 (No. 105); Discrimination (Employment and Occupation) Convention, 1958 (No. 111); Minimum Age Convention, 1973 (No. 138); and Worst Forms of Child Labour Convention, 1999 (No. 182).

on advice and consultancy, including interactive exercises designed to strengthen management–worker collaboration in relation to social dialogue. Commerce firms participating in the scheme include Ann Taylor, Debenhams, Gap, H&M, Inditex, Next, Primark and the US consumer-owned cooperative REI; several major brands are also participants.

Better Work carries forward the Better Factories Cambodia (BFC) project first established under the ILO's auspices in 2001, which was designed to ensure that garment factories in Cambodia comply with ILO international labour standards and with local labour laws. The BFC aimed to provide training opportunities for workers, union leaders and management in an effort to improve social dialogue and create better working conditions (Community Legal Education Centre and CCC, 2012).

More recently, the G7 meeting in early 2015, under the presidency of the German Government, has taken a lead on promoting decent work through sustainable and safe GSCs. G7 initiatives in this year include the launch of the Vision Zero fund, designed to focus on factory safety.

The 2016 International Labour Conference will provide a further opportunity to progress discussion at the international level on GSC issues in relation to decent work.

## 4.7 Actions by governments

As regards apparel, state intervention has been seen as crucial in the success of several key countries where governments took significant steps in the run-up to the abolition of the Multi-Fibre Arrangement in 2005. In Bangladesh, for example, the Government developed the Post-MFA Action Programme. In India, the National Textile Policy 2000 included a range of strategic and technical measures. In China and Viet Nam the State invested heavily in infrastructure and workforce training. In Sri Lanka, a Five-Year Strategy was developed, including "Garments without Guilt" accreditation; this initiative has however attracted some union criticism (Lopez-Acevedo and Robertson, 2012).

Ten years on, governments continue to be key actors in moves taken towards decent work in commerce GSCs. Mention can be made of the New Labour Contract Law adopted in China in 2008, designed to reassert the basic values of labour protection in state policies. Minimum wages have been introduced in most countries with significant garment-making sectors, albeit that campaign groups still argue that minimum wage rates remain considerably below living wage levels.

It has been suggested that export processing zones (EPZs) could be used as centres of excellence for responsible labour practices. According to UNCTAD's World Investment Report 2013, "some EPZs maintain clear policies on labour practices, including minimum wage standards, regulations on working hours, and trade unions. In most cases these stated labour standards conform to local and national laws, however in a few cases these standards are higher" (p. 188). In EPZs in Bangladesh, according to one research report, three consecutive monthly reports of non-compliance can lead to the cancellation of the import–export licences of a factory (Ahmed and Nathan, 2014).

Other governments are also potentially able to play a part in encouraging decent work in GSCs. Canada's decision last year to enhance its Corporate Social Responsibility Strategy included plans to withdraw government sponsorship ("economic diplomacy")

of local firms which breach this national strategy or which refuse to participate in the OECD Guidelines for Multinational Enterprises disputes resolution mechanism. This interesting approach to "economic diplomacy" covers initially the extractive industries only (Foreign Affairs, Trade and Development Canada, 2014).

Commentators have also noted that California's Labor Code holds buyers liable as a guarantor for unpaid wages in circumstances where "it unreasonably [reduced] payment to its contractor where it is established that the guarantor knew or reasonably should have known that the price set for the work was insufficient to cover the minimum wage and overtime pay owed by the contractor" (Anner, Bair and Blasi, 2012).

## 4.8 Actions and initiatives by social partners

Several large commerce corporations are engaging with trade union partners in moves to encourage freedom of association at suppliers' factories. Once again, most action to date has focused on GSCs in apparel. The Freedom of Association Protocol in Indonesia is a formal public agreement signed between six major sportswear brands, their suppliers and Indonesian trade unions. In Turkey, the Joint Turkey Programme brings together clothing retailers Arcadia, Next and Inditex in partnership with IndustriALL to build mature industrial relations in the country. Gap has reportedly partnered with IndustriALL to provide training on freedom of association for 14 suppliers in India and Sri Lanka; Inditex has undertaken initiatives with IndustriALL in South America and East Asia as well as in Europe (CCC, 2014b).

Tesco has reported that it has been working with international unions and NGOs to combat the Sumangali forced labour scheme in India. Marks & Spencer has organized worker hotlines in China to express grievance, and has trialled a mobile phone application in India and Sri Lanka, enabling workers to respond to surveys in their own languages by using the touch-tone keypad. Carrefour has developed a poster in local languages to communicate to workers in supplier factories their rights under the company's agreed GSC code. Other retailers have launched similar initiatives in recent years (CCC, 2014b).

However, much of this good practice remains at the pilot stage and does not extend beyond a relatively small number of factories. The impact of these initiatives has also yet to be assessed by academic writers. (It must also be noted that some commerce companies do not declare any initiatives at all in relation to good practice in supply chain purchasing.)

Training and education is a potentially important tool for both economic and social upgrading, and a focus on workforce development can improve a country's position in global GSCs. In relation to training, several initiatives have sought to improve the position of workers working in the fruit and vegetable GSCs. In some cases government agencies have taken the lead: in Chile for example, the National Labor Skills certification system has helped many thousands of workers in horticulture production, packing and cold storage improve their knowledge and have their skills certified. In South Africa the Agricultural Sector Education Training Authority and the National Training Institute provided training for women in the packing segment of the GSC (Staritz and Reis, 2013). Initiatives like these are good examples of economic and social upgrading going hand-in-hand.

A partnership between the British supermarket Waitrose and the UK Government's Department for International Development, as part of a more general Trade and Global Value Chains Initiative, aims to increase young people's skills and youth empowerment in the horticulture supply chain in South Africa. The project, aimed at 16–25 year olds, aims to improve both their leadership and job skills (DfID, 2013).

Similar efforts can be noted in the apparel GSC. The fashion retailer Gap, for example, has a Personal Advancement and Career Enhancement (PACE) programme which seeks to provide "female garment workers with the foundational life skills and enhanced technical skills need to advance in their personal lives and in the workplace". Over 20,000 women have participated (Gap, quoted in CCC, 2014b, p. 50).

In Sri Lanka, extensive training for the apparel industry has been coordinated by the national trade body JAAF (Joint Apparel Association Forum). In Bangladesh, the trade associations for both the textile and knitwear sectors BGMEA (Bangladesh Garment Manufactures & Exporters Association) and BKMEA (Bangladesh Knitwear Manufacturers & Exporters Association) have initiated free training for socially marginalized groups in the northern, poorer, region of the country (Lopez-Acevedo and Robertson, 2012; Psilos and Gereffi, 2011).

One interesting question is the extent to which trade unions in retailers' home countries are engaging in social partnership with companies on issues relating to GSC employment conditions. Retail workers are relatively well organized in many countries, and are federated internationally through UNI Global Union (UNI, as mentioned above, is an organization covering the service sector which nevertheless took a leading role in negotiating the Bangladesh Accord.)

Perhaps the best example of social partnership in relation to supply chains can be found in Scandinavia, in the partnership between Swedish-based retailer H&M and the Swedish trade union IF Metall. Both partners have joined forces for a project in Cambodia aiming at encouraging Cambodian factory owners and trade unions to work together more effectively, one of a number of similar initiatives in Asia. H&M and IF Metall also worked together on occupational safety in Bangladesh following the Rana Plaza collapse.

There is certainly scope for commerce unions in other worker organizations to adopt a similar approach to IF Metall. It may be appropriate for UNI Global Union to review this area at a future commerce sector conference.

## 4.9 Actions and initiatives by other stakeholders

GSCs in the commerce sector have, almost uniquely among GSCs, been subject to considerable scrutiny by consumer-led campaigns concerned to ensure that the products consumers find in the shops are ethically sourced.

As we have seen, this attention has been focused particularly on fashion goods (and sportswear) and on food items, although there has been some consumer interest in other retail goods such as wood furniture. In the United States, the Worker Rights Consortium, with its interest primarily on university branded products, was founded in 2001 by students, university administrators and labour rights activists and has links with another body, United Students Against Sweatshops. In Europe, several countries have their own consumer-led campaigning bodies focusing on this issue; they work together at European level through the Clean Clothes Campaign (CCC). The Worker

Rights Consortium and Clean Clothes Campaign are two of four NGO "witness signatories" to the Bangladesh Accord.

Multi-stakeholder initiatives, such as the Fair Wear Foundation, the Fair Labor Association and the Ethical Trading Initiative, have been mentioned earlier in this report, in the context of the codes of practice they have established for voluntary governance measures in global GSCs.

Fairtrade International oversees and develops the use of the fair trade logo, now a familiar symbol on products (particularly food items) in Australia, Europe and North America. From its origins in relation to particular products such as coffee, tea and chocolate, Fairtrade International has extended its work to other GSCs. Its Fairtrade Standards include strong endorsement of good working conditions for workers. "Fairtrade International regards the ILO core conventions as the main reference for good working conditions," it says (Fairtrade International, 2011, p. 24).

Fairtrade International is currently engaged in consultations for a possible future Fairtrade Textile Standard. This will extend fair trade standards for cotton production to the factories where cotton is manufactured into garments. This proposed new standard is based on the eight ILO fundamental Conventions, together with other ILO Conventions and Recommendations covering hours of work, workers' representation and occupational safety and health. The standard will cover subcontractors as well as main contractors and will not permit home working.

The fair trade movement has been particularly embraced by some parts of the cooperative movement. Cooperative enterprises have their own specific approach to issues associated with GSCs, in that the sixth international cooperative principle encourages inter-trading between cooperatives. One interesting example of C2C (cooperative to cooperative) trading comes from Kenya and the United Kingdom, where tea from over 11,000 Kenyan smallholders is being supplied to the UK retailer the Cooperative Group. The smallholders have associated themselves into five growers' cooperatives and their produce is fair trade certified. Both the Co-operative College of Kenya and the Co-operative College of the United Kingdom are associated with this initiative, known as the FRICH project. However a detailed assessment of the impact of this initiative on economic and social upgrading is currently not available (FRICH, 2012).

# 5. Towards good governance in commerce GSCs: Concluding remarks and recommendations

## 5.1 Identifying the issues

In many respects commerce GSCs operate remarkably effectively. They bring the goods which customers want to the retailers, in the quantities ordered and at the times requested. Logistically speaking, they are a considerable achievement. In food GSCs they offer traceability, and therefore greater protection from contaminated food. In apparel, they supply the fast-moving fashion industry with constantly updated stock.

But GSCs in commerce have an Achilles' heel: the apparent difficulty in ensuring that workers employed in the production part of the supply chain can enjoy decent working conditions. Despite the efforts of more progressive GSC lead firms, work by trade unions, NGOs and consumer campaigning groups, despite government intervention and despite, too, considerable outlays of money, very many workers in GSCs have to work for inadequate wages, in dangerous workplaces and under oppressive working conditions.

This is not inevitable. As has been mentioned, history suggests that social dialogue can be developed successfully. In the early days of the textile industry in both the United Kingdom and the United States, sweatshops were effectively controlled and labour costs taken out of the competitive arena. The task now is to replicate this approach in a global context, and in forms effective for the twenty-first century.

Ensuring that commerce GSCs adhere to core labour standards, reducing social dumping and increasing competitiveness in international markets in ways other than through undercutting on labour costs would appear to have added value for both sides of industry. The ultimate goal, therefore, would seem to be to work for well-functioning GSCs where social dialogue operates effectively and where wages are taken out of inter-company (and indeed inter-country) competition. One writer has suggested that the objective should be a trinity of stable orders, fair prices and safe factories in GSCs (Nathan, 2013); to this can be added a fourth objective: living wages.

There are major commerce multinationals which would be pleased to see this outcome brought about. They understand the reputational risks they currently run by being associated with contractors and suppliers offering unacceptable employment conditions and wages, but they are frustrated at the limits to what they can achieve on their own. They also know that they currently run the risk of being undercut by less scrupulous retailers.

A sustainable solution to the present unsatisfactory position must be one, therefore, which offers collective rather than individual ways forward and which is firmly rooted in international social partnership. The remainder of this report offers some proposals and recommendations for ways to achieve this.

## 5.2 Link social and economic upgrading

Economic upgrading is considered the path forward for growth and economic development for countries which find themselves positioned at the lower value-added points of GSCs. While economic upgrading, as we have seen, does not necessarily automatically mean social upgrading there is a strong logic towards ensuring that the two developments do take place together.

Social upgrading involves the improvement of workers' pay, conditions and skills levels (TUAC, DGB and ITUC, 2015), a process which positions the workforce so that it is better able to undertake higher-value work. In other words, there is the opportunity of a virtuous circle where, as the quality of work and the reliability of the workforce improve, the chance can be seized to occupy other areas of the GSC, where rewards are higher.

Social upgrading by itself, while a development to be encouraged in terms of defending labour standards, could potentially run the risk of a country being undercut by other States with poorer standards of wages and employment conditions. Coupling social and economic upgrading together obviates this danger.

## 5.3 Strengthen the existing international instruments

Valuable instruments have already been developed which can be of use.

The ILO's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, first adopted in 1977, was last updated in 2006. It is a valuable statement of intent for promoting decent work in multinational enterprises, one which has been agreed by employers' organizations, workers' organizations and governments. It would be more useful in the context of GSCs, however, if its provisions were extended to cover MNEs' responsibilities towards their supply chain contractors. The Tripartite Declaration of Principles also currently lacks compliance procedures.

The OECD Guidelines for Multinational Enterprises is another well-established international instrument, with compliance mechanisms provided through the network of National Contact Points (NCPs). Canada's use of the OECD Guidelines in the context of its Corporate Social Responsibility Strategy and its approach to "economic diplomacy" (see section 4.7) suggests an approach other countries could consider taking. Strengthening the complaints mechanism and the role of the NCPs would be a further useful development.

The UN Guiding Principles on Business and Human Rights establish the framework for both governments and businesses to adopt to ensure that human rights are respected. (Union bodies make the argument that the requirement on businesses to respect human rights throughout their operations in the UN Guiding Principles should be deemed to include supply chains (TUAC, DGB and ITUC, 2015)). The UN strongly encourages all States to develop and enact a National Action Plan on business and human rights based on the Guiding Principles. Currently seven States have adopted National Action Plans, and other countries are undertaking preparatory work. This initiative could usefully be strengthened.

The UN's Global Compact also offers a very widely endorsed initiative for good practice by business.

It should be noted that a number of ILO instruments are of direct relevance to workers in food and agriculture GSCs. The International Labour Conference in 2015 reviewed the application of Conventions and Recommendations as they apply to rural workers, giving particular focus to the Right of Association (Agriculture) Convention, 1921 (No. 11), the Rural Workers' Organisations Convention, 1975 (No. 141), and the associated Recommendation No. 149 (see ILO, 2015c). Strengthening compliance with these and other relevant Conventions would support moves to improve employment conditions in food GSCs.

## 5.4 Joint responsibility between GSC lead firms in commerce and suppliers

Lead firms at present sidestep any direct legal duty for employment conditions upstream in their GSCs by outsourcing responsibility to their contracting suppliers and subcontractors. Trade unions, NGOs and others have argued that this is the root cause of current poor practice among suppliers.

International trade union bodies, in their submission to the 2015 G7, call for an ILO Convention which would establish that multinational enterprises are responsible for employment rights and safety in their supply chains (TUAC, DGB and ITUC, 2015).

Such a development would not be an entirely new departure in terms of industrial relations. The example of "jobbers' agreements" in the United States in the early twentieth century, referred to above in section 4.3, offers a precedent where buyers as well as suppliers were formally integrated within a legally binding collective bargaining process.

In this context, it can be noted that some of the same issues around employer responsibilities found within GSCs have arisen in recent years in relation to the growing use by companies of temporary agency staff, where a three-way relationship exists between worker, employing agency and "host" company. The need to protect employment conditions of agency workers was addressed by the ILO with the adoption of the Private Employment Agencies Convention, 1997 (No. 181).

One practical issue where GSC lead firms have been asked to intervene is in relation to unpaid wages due to staff working for suppliers. The problem of companies who abscond without paying employees their wages (whether because of bankruptcy or for more nefarious reasons) is considered a major issue in the apparel industry. Various schemes to hold money in guaranteed deposit or escrow accounts have been proposed and in some instances are in operation (Anner, Bair and Blasi, 2012).

## 5.5 Developing stronger social partnerships

The lack of what has been called "mature" social dialogue mechanisms in commerce GSCs can have adverse repercussions on both employers and workers.

Much industrial action undertaken by garment factory workers in countries engaged in apparel GSCs has been informal and spontaneous, taking the form of wildcat strikes and protests. While these actions have in some instances achieved the desired results (including for example increases in the legal minimum wages payable), the lack of stable mechanisms for resolving disputes before the pressure builds up and explodes is unhelpful for company performance and productivity, as well as being potentially hazardous for workers.

As the Better Work initiative has tried to demonstrate, employers have potentially as much to gain as workers from well-functioning social dialogue. To quote the conclusion of the joint Framtiden/Cividep study of Indian garment factories has put it, "workers are the best monitors of the labor standards of their workplaces. Empowering them should be a top priority" (Parakuni et al., 2015, p. 97).

Achieving this may require a sensitivity by trade union organizations to gender issues and an understanding that traditional union ways of doing things will not necessarily

be seen by workers as the most appropriate for their needs. In some countries, women workers have created separate organizations independent of more established unions which are dominated by male leaders. While unions are rightly concerned at the development (encouraged by some employers) of workplace representative committees entirely outside the union movement, unions themselves should seek to ensure that workers are empowered. There is once again a historical precedent from the United Kingdom and United States of women garment workers initially organizing separately before eventually mature unions with both men and women as members came into being.

If trade unions have an important role to play, lead firms in commerce GSCs have a duty to understand that the issues raised by supply chain practices are central to their management strategy and not a marginal issue to be delegated, say, to CSR specialists. A commitment to good practice is necessary at board level; without high-level support, more junior staff will struggle to implement policies effectively. Fully effective working partnerships between teams of buyers and CSR teams are also required.

At international level, the existing global framework agreements provide a model of good practice in social dialogue which should be encouraged. GFAs, because they are formal agreements between both social partners, offer a degree of rigour lacking from voluntary or unilateral commitments. GFAs are increasingly being extended to cover supply chain issues, and while it is too early to assess the effectiveness of this development, it can be seen as an encouraging forward step. However, GFAs by their nature concern single multinational enterprises; as we have seen, a sustainable solution requires collective action.

The significance awarded to the Bangladesh Accord by trade unions is therefore worth noting. By bringing together more than two hundred commerce companies, international trade unions and local trade union bodies, the Accord demonstrates that health and safety issues in GSCs can be addressed and resolved, using the same legal instruments as are in force to deal with contractual disputes.

Although not all large retailers have chosen to participate and some companies are concerned at precisely the element of legal underpinning of the agreement, the experience of the Accord during the first five years of its life needs to be closely monitored. Agreements such as this between GSC lead firms and trade unions suggest that new approaches to GSC labour issues can indeed be devised.

## 5.6 Conclusion

Voluntary, unilateral and multilateral measures to improve working conditions in GSCs have achieved only limited results. Moving towards more established social dialogue would seem to be the best way to deepen these gains.

The 2016 debate at the International Labour Conference on GSCs is a key opportunity for more detailed discussion. It should be seen as a potentially valuable step forward.

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# Promoting Decent Work in Global Supply Chains: The Gold Industry

*Lucy Lu Reimers*

**Study 2**

# Study 2

## Contents

# Executive summary

This report provides an analysis and evaluation of social and economic upgrading in the global gold supply chain. It draws particular attention to the decent work challenges at the gold mining stage of the supply chain.

Although a chapter is devoted to economic upgrading, the main focus of the report lies on social upgrading and downgrading in the gold supply chain. Social upgrading and downgrading is benchmarked against the International Labour Organization's Decent Work Agenda. The report contains numerous positive examples of social upgrading in the gold supply chain. However, this does not imply that the gold supply chain is considered to be a model supply chain overall. The examples are merely listed to inspire more widespread good practices in this context.

The key findings are:

- Formal, large-scale gold mining does not create significant employment in host countries. In contrast, millions of livelihoods all over the world depend on artisanal and small-scale gold mining (ASGM), which is labour-intensive and constitutes a significant source of income for workers in developing countries' rural economies.
- The most serious labour rights violations, including child labour and forced labour, have been documented in the informal artisanal and small-scale gold mining sector. Occupational health and safety conditions are very poor in the ASGM sector, due to the widespread use of hazardous chemicals such as cyanide and mercury in gold pre-processing operations. Social protection is also severely lacking.
- Informality is a widespread and long-standing issue in the ASGM sector. Although there has been a shift in government attitudes, from a prohibitive to a facilitative approach, formalization has still not been achieved on a larger-scale.
- Violations of the right to freedom of association and the right to collective bargaining have been documented in the large-scale gold mining sector.
- Illegally produced gold ends up being traded on the international gold market, implicating refineries, gold traders, and jewellery retailers in the indecent working conditions and human rights abuses that occur upstream of the gold supply chain.
- A growing awareness of the harmful effects of gold mining has led to numerous governance initiatives to improve social and environmental performance in the gold supply chain. However, these initiatives have led to improvements in only a few select locations, creating "role model" gold mining communities, but failing to lift the majority of ASGM communities out of poverty and indecent working conditions.
- At the gold refining stage, enterprises and industrial associations are now expected to be more vigilant about their sourcing practices. Situated in the middle of the gold supply chain, refiners can have the biggest impact on social and economic upgrading in the gold sector.

Recommendations for social and economic upgrading in the gold supply chain include:

- Instead of criminalizing informal ASGM, governments, in partnership with employers, workers and civil society, should facilitate transitions to formality through capacity-building initiatives and the promotion of small-scale gold mining cooperatives. Certification schemes as well as direct linkages between artisanal gold miners and socially conscious jewellers should also be expanded in order to promote decent working conditions in ASGM.
- The rights to freedom of association and collective bargaining should be respected in order to achieve sustainable and widespread social upgrading for workers in the gold supply chain.
- New standards and governance regimes that have sprung up in the gold mining and trading context should be expanded in their coverage, harmonized, and strengthened through the engagement of all affected stakeholders (including workers, affected communities and civil society organizations) as well as public governments, in order to become more rigorous and transparent.
- Governance actors should work in partnership in order to create social and economic policies that will lead to long-lasting and sustainable improvements for workers in the gold supply chain. Currently, there is a patchwork governance framework for the gold supply chain, as different governance actors have come up with different initiatives. These need to be harmonized and integrated into a more coherent governance framework for gold.
- Finally, workers' and affected communities' voices in the gold industry should be strengthened. Establishing grievance mechanisms at different levels (including at the company level and within transnational governance frameworks) would be an important first step in ensuring that workers' and communities' voices are heard.

The report is limited because there is a lack of data in many areas important to the inquiry into social and economic upgrading in the gold supply chain. Although there is a large amount of information about conditions in the gold mining phase, there is a lack of information about working conditions at later stages downstream of the gold supply chain, including in gold refineries. There is also a lack of information about decent work indicators in the large-scale gold mining and processing industries, including on working hours and social protection.

# Abbreviations and acronyms

| | |
|---|---|
| **AMCU** | Association of Mineworkers and Construction Union (South Africa) |
| **ARM** | Alliance for Responsible Mining |
| **ASGM** | Artisanal and Small-Scale Gold Mining |
| **CBA** | Collective Bargaining Agreement |
| **CEACR** | Committee of Experts on the Application of Conventions and Recommendations |
| **COMIBOL** | Corporación Minera de Bolivia |
| **CSR** | Corporate Social Responsibility |
| **GFA** | Global Framework Agreement |
| **GMAZ** | Gold Miners Association of Zimbabwe |
| **GRI** | Global Reporting Initiative |
| **GUF** | Global Union Federation |
| **HRW** | Human Rights Watch |
| **ICEM** | International Federation of Chemical, Energy, Mining and General Workers Unions |
| **ICMM** | International Council on Mining and Metals |
| **IFA** | International Framework Agreement |
| **IIED** | International Institute for Environment and Development |
| **IPEC** | International Programme on the Elimination of Child Labour (ILO) |
| **IRMA** | Initiative for Responsible Mining Assurance |
| **KYC** | Know Your Customer |
| **LBMA** | London Bullion Market Association |
| **NUM** | National Union of Mineworkers (South Africa) |
| **OECD** | Organisation for Economic Co-operation and Development |
| **OSH** | Occupational Safety and Health |
| **PAMP** | Produits Artistiques Métaux Précieux |
| **RJC** | Responsible Jewellery Council |
| **SADC** | South African Development Community |
| **SECO** | Swiss Economic Secretariat |
| **UNEP** | United Nations Environment Programme |
| **WIPO** | World Intellectual Property Organization |

# 1. Introduction

The extractive industries have long been framed as a force for development and the mining sector in particular has been viewed as an opportunity to increase foreign direct investment, link up to global markets, and attract large multinational companies. A closer analysis of the global gold supply chain, however, reveals the gap between these aspirations and the reality on the ground. Gold mining has not necessarily brought prosperity to the peoples of resource-rich countries. Instead, it is often an activity carried out by poor and marginalized communities.

In the face of gold's glittering allure, the enormous human and environmental cost of extracting the precious commodity is often rendered invisible. Nowadays, gold is only rarely found in raw form, for example as a nugget in a riverbed. Instead, it is distributed finely and in extremely low concentrations all over the world. In the natural environment, fine specks of gold are barely distinguishable from the rocks in which they are contained. Only through massive industrial or hugely labour-intensive processes can small amounts be extracted from the earth that envelops them.

Although there have been numerous initiatives to raise the social and environmental standards in the gold supply chain (particularly at the mining stage), they are fragmented and unconnected, tend to have narrow focus (often dealing solely on the conflict-minerals aspect and disregarding labour issues), and have failed to sustainably foster social upgrading along the supply chain.

One explanation for the lack of progress is the division of the gold mining sector into parallel economies: on one hand, the informal small-scale gold mining sector, and on the other hand, the formal large-scale gold mining industry. Conditions in the informal gold mining sector are vastly different from those in the formalized large-scale gold mining industry. The informal gold mining sector is "often highly exploitative and unregulated, plagued by issues like child labour and hellish working conditions and causing enormous environmental damage because of the mercury and cyanide used in the extraction process, not to mention an almost complete lack of traceability along the supply chain" (International Co-operative Alliance, 2015). Economic and social upgrading is difficult to achieve in the informal landscape of artisanal and small-scale gold mining (ASGM), which is poverty-driven and, as it is often unregulated and carried out without supporting frameworks (such as access to markets and social security), often provides just enough income for miners and their families to survive, let alone improve their livelihoods, working conditions or address their social protection needs.

Moreover, there is a definite ceiling for economic upgrading in the gold supply chain, as the higher value-added phases of the chain are conducted exclusively in countries perceived as stable and secure. Switzerland, the global transit hub for gold on account of its incomparable economic and political stability, exemplifies this "economic upgrading ceiling". Developing countries, especially, lack Switzerland's "exceptional level of security and efficient logistic and financial systems" (Mariani, 2012) and are thus unable to provide the necessary business environment for the refining of and trade in large quantities of gold.

## 1.1 Overview of the global gold supply chain

### 1.1.1 The structure of the gold supply chain

The supply of gold comes mainly from three different sources, namely output from mining, recycled scrap (from manufacturing processes, used electronics, and recovered jewellery), and central banks holdings (Tcha, 2003). This paper will focus mainly on the gold supply chain as it starts at the mining stage. The gold mining supply chain is divided into two parallel strands, the formal and the informal, which may intersect at different points.

The mostly formal, large-scale gold supply chain can be roughly structured into the following phases, mining, processing (smelting), transport, refining to higher purity levels, and finally, global trade and retail to various end users in the jewellery, electronics (manufacturing), health care and finance sectors, as well as precious metals recycling.[1]

The mostly informal, artisanal and small-scale gold mining (ASGM) supply chain is structured into the following phases: setting up of rudimentary mining operations (often on abandoned mine sites formerly operated by industrial mining companies), rudimentary extraction and processing of gold ore into unrefined bullion (commonly with the help of hazardous chemicals such as mercury and cyanide), transport and trade, refining, and finally entry into the global market, at which point informally produced gold becomes virtually indistinguishable from formally produced gold.

The two strands of the gold supply chain, the formal and the informal, converge before the refining stage. Small-scale gold miners sell their unrefined gold to traders, who amass a large enough quantity of gold to sell to smelters, where it is processed to bullion, which is in turn bought by large, formal refineries, at which point the illegal gold enters the formal gold economy. The gold supply chain can be likened to a “funnel”, with numerous traders buying gold from various mining sites, and with fewer and fewer actors involved as gold moves along the supply chain, until it reaches a small number of international refiners (Human Rights Watch, 2015). Consequently, refiners play a pivotal role in the gold supply chain as the last actors on the downstream end of the chain that are still reasonably proximate to the source, with a chance of identifying the conditions under which it was mined.

Gold has various end uses. Jewellery, investments and technology make up the highest demand for gold (Corti and Holliday, 2009). India was until recently the largest jewellery market, with Indian women as the driving force (holding around 18,000 tonnes of gold in the form of jewellery), but it was overtaken by China in 2011 (World Gold Council 2015c). Governments also hold gold in reserve. Around 20 per cent of the global above-ground supply of gold is held by central banks (World Gold Council 2015c). Apart from being used as money and financial security, gold’s unique chemical and physical properties also make it valuable in the manufacturing industries. The electronics industry relies on gold for its conductivity and resistance to corrosion (Corti and Holliday, 2009). Gold is also used in the health-care industry for dental crowns and certain medicines; in the chemical industries as a catalyst; in the automotive industry in catalytic convertors to convert harmful emissions into safer substances; and in the engineering sector (World Gold Council 2015c).

1 Due to being easy to recycle and valuable, considerable amounts of gold are repurposed.

### 1.1.2 Main actors in the gold supply chain

The actors in the gold supply chain correspond to its different stages. Actors involved at the mining stage include self-employed artisanal miners, small-scale mining cooperatives, medium-sized and national companies operating several small to medium-sized mines at the national or regional level, junior mining companies, and large multinational enterprises. A few multinational mining firms dominate gold production. In 2014, the top five gold mining companies were Barrick Gold (Canada), Newmont Mining (United States), AngloGold Ashanti (South Africa), Goldcorp (Canada), and Kinross Gold (Canada), in descending order from largest producer to smallest (Investing News Network 2015). Governments also play a role in gold mining. In China, state ownership of gold mining and refining companies significantly shapes the industry (World Bank, 2011).

The formal gold mining industry is supported by "an extensive network of consultants, contractors and service companies", whose activities include exploration, drilling, the design and construction of new mines, and environmental and social impact assessments (IIED, 2002, p. 63). The companies servicing the mining industry may range from small, highly specialized firms, to large enterprises offering a number of geological, engineering and environmental services (IIED, 2002).

Individual miners and small mines sell their unrefined gold to traders, who consolidate an adequate volume of gold from various sources to sell to smelters. Some large mining companies do their gold refining in-house. The gold mining company AngloGold Ashanti for example, owns a 42.41 per cent share in the Rand Refinery (AngloGold Ashanti, 2014a).

Commercial precious-metal refineries are important players in the gold supply chain. At the mine or smelter, gold is only crudely processed into doré bars, also called bullion, which are semi-pure alloys of gold and silver. These are then transported to a refinery for further processing, i.e. separation and purification, in order to reach the high quality levels required for selling on the world market. Gold recyclers are a subsector of the refining industry. In the less formalized gold industry, gold traders, scrap merchants, and scrap refiners play a significant role.

### 1.1.3 The characteristics of the gold supply chain

Gold's exceptional qualities have shaped the gold supply chain in some unique ways. Firstly, gold is not just a commodity but also a monetary asset (Boyle, 2012). Gold acts as an insurance because it has steady and universal value and, unlike money, it cannot simply be printed (Mariani, 2012). Consequently, gold plays an important role not just in the world economy but also in individuals' lives.

Although gold has held consistently high value, (extreme) price fluctuations do occur, which is why gold is subject to speculative investment. Between 2002 and 2012 the price of gold increased by 400 per cent (Larmer 2009), leading to a surge in artisanal and large-scale gold production (Seccatore et al., 2014). According to Seccatore et al. (2014) and Larmer (2009), the rise in gold prices, from US$290 per ounce (October 2001) to US$1,740 per ounce (October 2011) was largely a consequence of a "shift towards safe investments" in a period of global economic crisis and uncertainty following the 11 September attacks in New York, 2001. In the course of the last decade, gold production rose to an annual average of almost 3,000 tonnes. However, the World Gold Council (2015b) expects production levels to revert to pre-crisis levels, due to cost pressures, lack of substantial discoveries and reduced project pipelines.

Gold mining is a global industry. It is mined in around 90 countries worldwide and no single country produces more than about 14 per cent of the world's gold supply. Historically, Australia, Canada, South Africa, United States and the former Soviet Union have stood out as major gold producing countries (Mjimba, 2011). In recent years, new States have also emerged as important gold producers, including China, Ghana, Mexico and Uzbekistan. In 2014, China was the leading gold producer, accounting for 15 per cent of total production (World Gold Council, 2015b). Artisanal gold mining is practised in approximately 80 countries, accounting for 20 per cent of gold mining output (World Bank, 2013).

Gold, which is a chemical element, is indestructible in its pure form. "It will not corrode, rust or tarnish, and cannot be destroyed by fire. All the gold taken from the earth during all of recorded history is still being melted and re-melted and used again and again" (Kenneth Gordon, 2015). Gold is infinitely recyclable and gold recyclers play an important role in the global supply chain. Today, about a third of the global gold supply comes from recycled gold.

Gold mining is costly, requiring extraordinary human or capital resources, but the high value of even small volumes of gold make the industry a nonetheless profitable sector. Developing countries with gold deposits rely on foreign direct investment for financing their large-scale gold mining projects due to the capital-intensity of the gold mining industry (Kumah, 2006). Gold mining not only takes a toll on labour and capital, but also on the environment and on human health. In the developing world, gold mining is often associated with severe environmental problems, including deforestation, cyanide and mercury pollution, and loss of biodiversity. Gold mining creates a "tremendous amount of waste", as gold ore can be mined at a lower grade than any other metal (Gifford, Kestler and Anand, 2010). Furthermore, gold mining projects have been associated with social unrest, loss of livelihoods and mass displacement (Kumah, 2006). Although artisanal and small-scale gold mining requires less energy, releases fewer greenhouse gases and produces less waste, it releases 40 times more mercury per unit of gold and uses more cyanide than large-scale mining (Buxton, 2013).

# 2. Economic and social upgrading and downgrading in the gold mining supply chain

## 2.1 Economic upgrading and downgrading

Economic upgrading has been defined as "the move to higher value added activities in production, to improve technology, knowledge and skills, and to increase the benefits or profits deriving from participation in global production networks" (Barrientos, Gereffi and Rossi, 2011, p. 323). Economic upgrading can be broken down into *process upgrading* (higher productivity through automation); *product upgrading* (introduction of more advanced product types through increasing unit value); *functional upgrading* (firms change the mix of activities they perform towards higher value-added tasks, often by increasing skills); and *chain upgrading* (shifting to a more technologically

advanced production chain by applying competences acquired in one function to a different sector or chain) (ibid.).

### 2.1.1 Economic upgrading in large-scale gold mining

Economic upgrading is a viable option in the large-scale gold mining industry. Metal mining industries are innovative, especially when it comes to process upgrading, functional upgrading and product upgrading.

A company can achieve *process upgrading* by investing in more advanced machinery and equipment to improve mining techniques. Technological upgrading also leads to improvements in labour productivity (Smith, 2004).

*Functional upgrading* in the mining industry occurs when mining companies start to include higher value-added activities, such as refining, in their portfolios. Furthermore, firms can realize both product and functional upgrading by diversifying their "raw gold" output according to the differentiated needs of their buyers. The firm Metalor is a good example, as it produces a spectrum of different gold products. In addition to "normal gold products" such as gold bars and coins, Metalor produces gold grain to sell to manufacturers of luxury and high-tech products, and special high-purity gold to sell for the electronics market. Metalor has also moved into higher value-added activities by manufacturing high-quality products from pure precious metals, such as advanced coatings and electrical contacts for the electronics industry (Metalor, 2015). Mergers and acquisitions can also lead to functional upgrading, as mining and refining companies are integrated into transnational vertical enterprises.

The Rand Refinery is an interesting example of *functional and chain upgrading* because it consists of a conglomerate of gold companies that work together in order to make gold refining more effective. The Rand Refinery has expanded its portfolio to "encompass the entire precious metals value chain", offering evaluation, logistics and vault services in addition to refining and smelting (Rand Refinery, 2015).

Finally, a gold mining or refining company can achieve *product upgrading* by participating in international certification schemes to increase the value of its gold. Of all certification schemes, probably the most important one is the "Good Delivery List" of the London Bullion Market Association (LBMA). The LBMA's criteria include "a minimum level of production and tangible net worth, with a rigorous technical assessment to review casting, refining and assaying abilities" (LBMA, 2014a). Other certification schemes focus on social and environmental performance and allow corporate actors in the gold supply chain to further upgrade their products.

### 2.1.2 Economic upgrading in small-scale gold mining

In the artisanal and small-scale mining sector, opportunities for economic upgrading are more limited. The sector is characterized by a lack of financial and technical resources and consequently, wasteful and inefficient mining and processing (Hilson, 2006). On the other hand, small-scale miners engage in mining partly because it is relatively easy to enter into the activity, due to "low investment costs and short lead time required from discovery to production" (ibid. p. 248).

In exceptional circumstances, for example when miners pool their resources through a cooperative, *product and process upgrading* can be achieved. The South African Development Community (SADC) Women in Mining Trust, for instance, is able to invest in more advanced equipment and tools collectively, thereby improving productivity

for all its members (Chimwala, 2004).Despite being a cooperative of precious stones miners, the SADC Women in Mining Trust is a good example of a supportive women's mining community.

Certain artisanal mining cooperatives have achieved *product upgrading* by linking up with jewellery retailers in the context of Fairtrade and other certification schemes. The Alliance for Responsible Mining for instance, has developed and tested the "Fairmined standard and certification system for artisanal gold", modelled on the fair trade system for agriculture (Alliance for Responsible Mining, 2015a). The gold produced by Fairmined certified organizations is thus guaranteed to have been produced free of child labour and unsafe working conditions, and with minimal environmental impact (see section 3.4).

In the Peruvian high altitude gold mine "La Rinconada", the extension of the local electricity grid led to the introduction of pneumatic drills and small electric mills to replace hammers and traditional leg-driven rock grinders (Larmer, 2009). Although this process upgrading led to a surge in gold production, most existing negative social and environmental consequences were not addressed. Today, the mine continues to be infamous for child labour, severely deficient health and safety conditions, and mercury pollution of the glacier and water supplies (ibid.).

It is rare for artisanal gold mining organizations to achieve significant product upgrading beyond ethically sourced gold, for example by advancing to gold jewellery fabrication. Firstly, businesses prefer to craft the end products themselves and secondly, these organizations may not have the capacity for widespread distribution. A workshop to train artisanal gold miners in Colombia to fabricate gold-based products for the international market was discontinued, because "customer trends favoured the provision of raw gold products from the region rather than finished consumer items" (WIPO, 2013).

## 2.2 Social upgrading and downgrading: Implications for decent work

Social upgrading is defined in this study as the gradual process leading to decent work in GSCs. Social upgrading can be divided into *measurable standards* (regular or irregular employment, wage level, social protection, working hours) and *enabling rights* (the right to freedom of association and collective bargaining, non-discrimination, empowerment) (Barrientos, Gereffi and Rossi, 2011).

The ILO's Decent Work Agenda is a crucial benchmark for measuring the process of social upgrading. The Decent Work Agenda reflects "an international consensus among governments, employers, workers and civil society that productive employment and Decent Work are key elements to achieving a fair globalization, reducing poverty and achieving equitable, inclusive, and sustainable development" (ILO, 2015). Its pillars are employment creation, rights at work, social dialogue and social protection, which will be analysed in this section.

### 2.2.1 Employment

#### *Job creation*

Large-scale gold mining creates relatively few jobs compared to other industries, as "mining is an industry generally known for being very intensive in capital investments

and having a relatively low level of direct employment" (Fleming and Measham, 2014). According to a study commissioned by the World Gold Council, "global gold mining directly employed over one million people in 2013, with over three million employed as a result of gold mining procurement activities … in most regions, over 90% of employees at gold mining operations are local workers" (Maxwell Stamp, 2015, p. 3).

It is often argued that jobs in the formal gold mining sector have a significant multiplier effect, as every direct job at a mine may indirectly create a host of related jobs in the construction, logistics, catering and maintenance sectors, among others (Maxwell Stamp, 2015). The number of jobs created by gold mining varies according to different stages in a mine's life cycle, namely feasibility, construction, operating, and closure; the greatest number of people are employed by a mine in the construction and operating stages of gold production (ibid.).

The potential for employment creation in gold refining is relatively small. However, these jobs are in general considered to provide good working conditions, in terms of wages and occupational health and safety. The Argor-Heraeus Refinery for instance, only employs 230 staff in Italy, Germany, Switzerland and South America combined, despite having a high annual refining capacity of 400 metric tons (Mariani, 2012).

Metalor Technologies, on the other hand, employs a significantly larger number of people around the world, in total 1,650, although the firm has only marginally greater refining capacity than Argor-Heraeus (ibid.). This might be due to the fact that Metalor has economically upgraded to include a diverse portfolio of value-added activities.

Compared to large-scale mining, artisanal and small-scale mining is extremely labour-intensive, and thus creates considerably more jobs. Artisanal and small-scale mining is "an important livelihood and income source for … poverty affected local populations" in developing countries of Africa, Asia, the Pacific, and Central and South America (World Bank, 2013). Research on small-scale mining is divided as to the economic role of small-scale mining. A first group of researchers view it mainly as a poverty-driven, rush-type activity motivated by financial distress and lack of alternative livelihoods, and often carried out on a seasonal basis; whereas a second group posits that small-scale mining is permanent and deeply entrenched as part of the rural economy, offering an escape out of poverty as well as economic opportunities for a diverse range of people (Hilson, 2009). However, regardless of how the subsector's potential for creating decent work is evaluated, it supports an enormous number of people worldwide. Seccatore et al., (2014) estimate that there are 16 million artisanal gold miners worldwide producing 20 per cent (Buxton, 2013) of global gold output. Moreover, almost 100 million people worldwide indirectly rely on small-scale gold mining (Larmer, 2009).

### *Skills*

Skills training is an integral part of the large-scale gold mining industry, with companies investing significantly in training the workers in their mines. Most of the training that gold mining companies provide to their employees is technical job-related training (63%), followed by health and safety training (21%), environmental training (6%), emergency response training (4%), and human rights training (6%) (Maxwell Stamp, 2015). However, subcontractors in the gold mining industry are often much less able to provide training. Given that subcontracting is common practice in gold production, a considerable number of workers in the industry are not being given equal access to training.

Skills development poses a significant challenge for artisanal miners who mine gold on a subsistence level. Lacking proper training and equipment, artisanal miners are often unable to exploit a mine to the degree that is possible with the more modern technology employed in large-scale mining. When a mine is exhausted (from the perspective of inadequately equipped miners), they will move out in search for a new mine, leaving behind hazardous mines and ghost towns (Seccatore et al., 2014). Small-scale gold miners are usually generalists, with everyone possessing more or less the same skill level, although a degree of specialization necessarily develops.

Skills training in safer and cleaner gold processing techniques would provide a valuable opportunity for social upgrading in gold mining and processing. A move away from using dangerous chemicals such as mercury and cyanide would considerably improve the health of workers and surrounding communities, as well as the environment. To achieve this, investment in skills training and more advanced equipment is necessary.

### *Informality*

Informality is a serious and long-standing issue in artisanal and small-scale gold mining (ASGM). In contrast, large-scale mining is usually conducted in the formal economy. Informality in ASGM is driven by a range of factors, with poverty and lack of alternative employment the main drivers (Veiga, 1997). In addition, the following factors contribute to informality, lack of legal knowledge, lack of incentives to formalize, lack of trust, a high tax burden, demanding bureaucratic procedures, and corruption (Hentschel, Hruschka and Priester, 2002). Limited access to mining titles and land is another important driver. Last but not least, artisanal gold miners often operate in remote areas far from government control. This geographic remoteness adds to the difficulties of regulating and formalizing the sector.

Although the regulation and legalization of small-scale mining has been called for since the 1990s[2] there has not been much progress (Sinding, 2005). According to Sinding, this lack of progress can be explained by a lack of political will and capacity, as well as the fact that legislative frameworks have not been able to resolve the many problems inherent in ASGM.

Changing the incentive structure can help lead miners out of informality. Sinding (2005) argues that accessibility and simplicity of the artisanal mining legal framework (e.g. the permit system) can facilitate the transition to formal small-scale mining. Furthermore, the design of the taxation system as well as transferable mining rights can also significantly support the transition (ibid.). Hilson (2009) suggests that policy-makers absorb and integrate existing customary practices developed in informal ASGM into the regulatory framework. Finally, encouraging cooperation between mines can contribute to the success of formalization (Sinding, 2005). Successful formalization could arguably lead to both economic and social upgrading. Artisanal miners working legally would be able to apply for technical and financial support from the government and other sources in the formal economy, as well as to gain access to social protection schemes.

Maconachie and Hilson (2011) consider Mali to be a positive example of an artisanal gold mining sector that is successfully transitioning into formality. They note that traditional mining has evolved from the individual or family stage into the formal sector through the creation of mining cooperatives, associations and economic interest

2 Cf. paras 22 and 23 of the Conclusions on social and labour issues in small-scale mines, adopted by the Tripartite Meeting on Social and Labour Issues in Small-scale Mines, 1999 (ILO, 1999).

groups. A legal procedure to obtain secure gold mining tenure, called the "gold-washer's card", facilitated this transition. In addition, capacity-building campaigns have supported implementation (Maconachie and Hilson, 2011).

### 2.2.2 Rights at work

#### *Child labour*

The ILO Worst Forms of Child Labour Convention, 1999 (No. 182) (180 ratifications) "defines the worst forms of child labour as all types of work, which by their nature or by the circumstances in which they are carried out, are likely to harm the health, safety and morals of children . . . Almost all work performed by boys and girls in mining could be considered a worst form of child labour" (ILO, 2007, p. 17).

There is no known child labour in the formal sector (ibid.). However, child labour can be indirectly linked to the large-scale formal gold industry through gold refiners sourcing from artisanal gold mines. International gold refiners in Switzerland, the United Arab Emirates and other countries have been implicated in child labour practices due to sourcing from countries such as Ghana, where child labour has been documented in artisanal and small-scale mines in the Western, Central and Ashanti regions (Human Rights Watch, 2015).

Child labour is a serious and persistent problem in artisanal and small-scale gold mining, where one million children are estimated as working (ILO, 1999, 2005). According to the United States Department of Labor (2014), child labour in gold mining is particularly prevalent in Bolivia, Burkina Faso, Colombia, the Democratic Republic of the Congo, Ecuador, Ethiopia, Ghana, Guinea, Indonesia, Mali, Mongolia, Nicaragua, Niger, Democratic People's Republic of Korea, Peru, Philippines, Senegal, Suriname, and United Republic of Tanzania.

Poverty is one of the main drivers of child labour in mining (Thorsen, 2012). Small-scale mining is often a family activity (ILO, 2007), which is why the most common way children become involved in mining is when they accompany and then work alongside a parent or relative (Thorsen, 2012). Children also enter into mining work due to lack of alternative options such as schooling (ibid.). Conversely, there are also instances of children doing mining work in order to finance their education.

Both girls and boys are involved in mining. Child miners are especially vulnerable to health risks and accidents associated with gold mining and processing. Exposure to mercury and other dangerous chemicals, carrying heavy loads and operating heavy machinery, and inadequately supported underground mine pits, poor ventilation, excessive noise and vibrations from machines, excessive heat or cold, awkward positions and extremely arduous work, are just a few of the serious health and safety risks faced by child miners (Humbert, 2009). As a consequence, they may experience physical and psychological developmental issues, brain damage and life-long disabilities from mercury poisoning, pain and respiratory problems (Human Rights Watch, 2015), and forgo attending school (Hentschel, Hruschka and Priester, 2002). In addition to mining tasks such as gold panning, girls are often burdened with domestic labour (e.g. preparing and transporting food and drinks) and mining-related services (e.g. retail and catering) (ILO, 2007). Girls are commonly also faced with commercial sexual exploitation (Thorsen, 2012).

The Santa Filomena experience is an example of how child labour was successfully eliminated from a gold mine. In 2004, the Santa Filomena mine was declared "child

labour free" following its inclusion in the ILO-IPEC Programme on the elimination of child labour in mining in South Africa (ILO, 2004). As a first step, the mining community in Santa Filomena had organized itself as a Mineworkers' Association, thus gaining access to a permit to use explosives and improved transport facilities. With the support of the ILO-IPEC Programme, a local NGO and Peruvian authorities, the miners were able to formalize, modernize their production and strengthen their organizational capacities. In addition, they benefited from improved social protection and education, nutrition and health services. A project to create income for women and awareness-raising efforts complemented these strategies. As a result of these concerted efforts, child labour was eradicated from the mine. The example shows how the complex problem of child labour requires a multi-faceted approach, significant resources, and political will from both authorities and the community to succeed.

Unfortunately, there has been little progress so far in removing children from mining on a wider scale. This may be due to a number of reasons. The issue of child miners pales in relation to the 100 million children who reportedly work in the agricultural sector. Furthermore, the soaring price of gold in recent years is directly correlated to a rise in the number of artisanal gold miners, including children. Finally, child labour is prevalent only in the informal artisanal gold mining sector, and in remote areas, and thus typically lacks government oversight.

### *Forced labour*

The ILO Forced Labour Convention 1930 (No. 29) (178 ratifications), the Abolition of Forced Labour Convention, 1957 (No. 105), and the Protocol to the Forced Labour Convention, 2014 (PO29) set out the international protection framework against forced labour. Forced or compulsory labour is defined in Convention No. 29 as "all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily".

There are cases in which the formal gold mining industry has been implicated in forced labour through subcontracting. A report by Human Rights Watch (HRW, 2013) draws attention to the problematic involvement of a Canadian mining firm (Nevsun Resources) in an Eritrean gold, copper and zinc mine (Bisha Mine) constructed by an Eritrean state-owned company (Segen Construction) that used forced labour. As reported by HRW, the Eritrean Government keeps a large proportion of its population in a programme of indefinite and prolonged forced labour (ibid.). Furthermore, in a 2014 lawsuit filed against Nevsun, plaintiffs also accuse Nevsun's subcontractor of subjecting workers to physical abuse and torture (Business Wire, 2014).

Forced labour is a common problem in small-scale gold mining, often staying hidden due to the informal nature of the sector. Forced labour in mining has been documented in all regions (Hidron and Koepke, 2014). According to the United States Department of Labor, forced labour in gold mining is especially prevalent in Burkina Faso, the Democratic Republic of the Congo, North Korea, and Peru (US Department of Labor, 2014). Forced labour also occurs in services around mining activities, such as household work, catering and sexual services (Hidron and Koepke, 2014).

According to a 2013 report by Vérité, there is a high incidence of forced labour in illegal gold mining in Peru. Unaffordable recruitment fees force Peruvian miners into a system of debt bondage. The forced labourers endure poor (often fatal) living and working conditions, and are unable to leave the mining sites. Informal mines in Peru produce between 15 and 18 per cent of the entire country's gold output (Vérité, 2013).

Formal businesses export the illegally mined gold (Wells, 2014), which moves up the supply chain, and has been known to end up in refineries in Switzerland (Castilla, 2012; Informationsstelle Peru, 2012). According to the Society for Threatened Peoples (2014), approximately half of Peruvian gold production is purchased directly by four Swiss-based refineries, namely Valcambi, Metalor, PAMP and Argor Heraeus. Subsequent calls for greater due diligence and transparency have given rise to responsible gold initiatives, such as the Swiss Better Gold Initiative, in the refining industry (see section 3.4).

### *Discrimination*

The ILO Equal Remuneration Convention, 1951 (No. 100) and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) constitute the international legal framework to protect people from discrimination. Article 1 of Convention No. 111 defines discrimination as "any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin".

In the gold mining context, women miners, disabled or ill people, HIV/AIDS orphans, and persons displaced by conflict or ex-combatants are especially vulnerable to discrimination (Fairtrade International, 2013).

For a long time, women in large-scale gold mining had been only granted marginal roles (Lahiri-Dutt and Macintyre, 2006). This attitude was reflected in the ILO Underground Work (Women) Convention, 1935 (No. 45) (ratified by 98 countries), which prohibits women from working on underground work in any mine. However, with the transformation of the large-scale mining industry from one of "brawn and muscle" to one in which machines play the dominant role, excluding women from mining has been revealed as discriminatory (Lahiri-Dutt and Macintyre, 2006).

Some progress has been made to improve women's participation in gold mining. In the large mines owned by multinational enterprises, technological advances have transformed jobs that were formerly considered too "heavy" for women into jobs that require more technical expertise and less manual labour. In Papua New Guinea for example, women work in geological exploration, plant operations and other fields that were previously reserved for men; and anecdotal evidence even points to women being preferred for certain jobs, such as vehicle drivers, because of their superior safety records (Lahiri-Dutt and Macintyre, 2006). The IndustriALL affiliate Los Mineros in Mexico organized a "Women of Steel" workshop targeting only women, demonstrating the shift in the mining industry towards more inclusiveness (IndustriALL, 2015).

Women in small-scale mining make up a larger proportion of the workforce than women in industrial mining. "Female participation in the mining sector becomes more and more pronounced the smaller the scale of the activity" (Lahiri-Dutt and Macintyre, 2006, p. 322). It is estimated that around 30 per cent of the world's artisanal miners are women, who are involved both in mining and processing of ore (Hinton, Veiga and Beinhoff, 2003). "In many countries around the world, women have great difficulties working in ASGM due to the existence of cultural and social taboos, discriminatory mining legislation, limited access to credit, a lack of education and technical knowledge, patterns of gendered labor division, and women's domestic work burden, among other things" (Bashwira et al., 2014, p. 113). Women also experience more difficulties accessing supportive services, such as training, and they face significant discrimination when trying to obtain land rights, loans, equipment, and hired labour

(Hinton, Veiga and Beinhoff, 2003). In addition, women receive lower wages and are at greater risk of violence (Buxton, 2013).

By forming civil society organizations and cooperatives, women can advance their economic and political interests in the gold mining sector (see section 3.2).

### *Freedom of association and the right to collective bargaining*

The ILO Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) and the Right to Organise and Collective Bargaining Convention, 1949 (No. 98) codify the fundamental workers' rights of freedom of association and the right to collective bargaining. In some parts of the mining world, these rights are still not recognized, and threats and attacks on union officials and organizers are frequent (IIED, 2002).

In the large-scale gold mining and processing industries, efforts have been made on a company basis by global union federations (GUFs) to strengthen respect for workers' rights, including freedom of association and collective bargaining, by negotiating international framework agreements (IFAs).

However, union participation often differs vastly within a single multinational enterprise. AngloGold Ashanti, for example, reports that union and collective bargaining participation has reached 93 per cent in South Africa, where the group has the largest number of employees (AngloGold Ashanti, 2013). On the other hand, the percentage of employees covered by collective bargaining in the company's United States mines is 0 per cent (AngloGold Ashanti, 2014b).

In South Africa, which is the largest gold producing country in Africa, there is a long history of collective bargaining in the gold sector (Chamber of Mines of South Africa (COMSA), 2014). Pay negotiations between labour unions and gold mining companies including Sibanye Gold, AngloGold Ashanti, and Harmony Gold are frequent, and often accompanied by strikes (Donville and Burkhardt, 2015). Strikes in the South African (gold) mining industry are almost a yearly occurrence and often motivated by workers' dissatisfaction with wage levels (Jamasmie, 2015). Whereas for gold and coal a centralized bargaining system exists in South Africa by virtue of agreements between the participants and established practice,[3] this system does not encompass the entire mining industry, and breakdowns in collective bargaining in other parts of the industry in South Africa have given rise to instances in which social conflict became violent.[4] In September 2013, a strike of 80,000 gold miners in South Africa to protest wage levels was further complicated by tensions between the two leading trade unions, the National Union of Mineworkers (NUM) and the Association of Mineworkers and Construction Union (AMCU) (Smith, 2013). The strikes were resolved peacefully however, when most of the miners accepted a pay increase and returned to work (BBC News, 2013).

It is often the case that multinational gold companies' advertised attitude towards workers' rights to freedom of association and collective bargaining differs widely from

3 Not all issues are dealt with at centralized level. In 1996, two-tier agreements were concluded which stipulated that bargaining on basic wages and conditions of employment would take place at a Chamber of Mines of South Africa level, while bargaining on organizational, operational and workplace issues would be at mine or company level (COMSA, 2014).

4 In 2012, 34 striking platinum miners were fatally shot by the police, leading to an inquir (Conway-Smith, 2015).

accounts by civil society watchdogs. Barrick Gold Corporation, the world's largest gold mining company (headquartered in Toronto), is an example of a gold company whose image is heavily contested. According to Barrick's official website, it "respects employees' rights to freedom of association and collective bargaining", and "works closely with labor unions or collective bargaining associations to develop and manage effective labor relations programs" (Barrick Gold Corporation, 2015). Barrick states that in 2014 employees in seven countries (Argentina, Australia, Chile, Dominican Republic, Papua New Guinea, Peru, Zambia) were covered by collective bargaining agreements (CBAs), representing over 35 per cent of its total workforce (ibid.). However, in Canada, Saudi Arabia, and the United States, 0 per cent of Barrick's employees were covered by CBAs (ibid.). In contradiction to Barrick's official line, accusations of alleged labour rights' violations have been levelled against the company, including breaches of freedom of association at gold mines in the United Republic of Tanzania (operated by Barrick's subsidiaries)[5] and refusal to register a trade union, and other anti-union acts, in Peru (Normlex, 2007; Facing Finance, 2013).

A case of union formation at Barrick Gold in Argentina demonstrates how collective bargaining can successfully advance social upgrading, even in the face of initial company reluctance and hostility. In 2009, Argentinian employees of Barrick Gold formed a trade union in order to negotiate for better safety conditions and higher wages (MiningWatch Canada, 2009). In response, Barrick fired the elected General Secretary of the new union (Normlex, 2009), refused to negotiate with the union, and threatened to fire workers who had called a strike to protest these actions (MiningWatch Canada, 2009). However, after a two-day strike, Barrick Gold signed a "historic agreement" recognizing the newly formed union as a negotiating partner, giving a 23 per cent wage increase to all employees, and reinstating the General Secretary (ibid.).

In the small-scale gold mining industry collective bargaining is largely absent due to the lack of formal employment relationships: "Generally, artisanal miners are not organised and have little bargaining power; thus, they largely remain 'price takers' vis-a-vis their sponsors or traders" (Tieguhong, Ingram and Schure, 2009). In the process of formalization however, freedom of association and collective bargaining gain in significance.

### 2.2.3 Social dialogue

Social dialogue is defined by the ILO as including all types of negotiation, consultation or exchange of information between or among representatives of governments, employers and workers, on issues of common interest relating to economic and social policy (ILO, 2002a). It is a valuable mechanism to promote better living and working conditions as well as social justice. In the large-scale mining industry, the trend towards dialogue and negotiation appears to be strengthening, as the industry is increasingly depending more on fewer workers; social dialogue in the mining industry is centred on issues such as excessive working time and inadequate health and safety standards (ILO, 2002b). Subcontracting also plays a major role in the industry, which has implications for social dialogue. In South Africa, for example, the rapid growth of subcontracting in gold mines in the 1990s led to tensions within the National Union of Mineworkers, specifically between regular mineworkers and contract mineworkers (Crush et al., 2001).

5 Barrick's subsidiary in Tanzania UR allegedly used dismissals as a method to discourage union membership (Protestbarrick.net, 2015).

Gold mining has been linked to social conflicts. Social conflicts in gold mining can occur between gold mining companies and workers (see for example CEACR cases no. 3030 Mali 2015, and no. 2597 Peru 2007) as well as affected communities (e.g. indigenous peoples), but they can also occur between different groups of miners, and between the government and informal miners. In Peru, a report published by Defensoria del Pueblo, an independent constitutional ombudsman, registered 213 social conflicts in January 2014, 48 per cent of which were based on mining issues (Society for Threatened Peoples, 2014, p. 10). Investing in social dialogue mechanisms to reduce and resolve conflicts related to gold mining is crucial for companies who want to keep their social licence to operate. Gold companies that engage with local communities, establish grievance mechanisms, and contribute to consensus building could greatly further social dialogue in the mining industry.

In the large-scale gold mining sector workers' organizations have an important role to play in improving working conditions. In some countries, tripartite bodies have been created to discuss labour issues such as occupational health and safety. In South Africa, negotiations on wages and conditions of work in the gold sector are centralized and take place every year (COMSA, 2014). In 2003 the NUM demanded that a bargaining council of trade unions and employers' organizations be established for the mining industry. Currently, the Chamber of Mines, NUM and two other trade unions, UASA and Solidarity, are engaged in negotiations about the principles that would underpin the creation of such a council (ibid.).

Given that a traditional employment relationship is typically missing (as most of ASGM miners are self-employed), miners face difficulties in finding counterparts to engage with in social dialogue. Hierarchical relationships are sometimes perceived to exist, but often relate to contracts, such as the right to land use by land owners under a royalty system, rather than employment contracts.

### 2.2.4 Social protection

#### *Occupational safety and health*

Mining is considered to be one of the most hazardous sectors, and traumatic injury and chronic exposure to occupational health hazards still remain challenges in the large-scale mining industry. Rock falls, vehicle accidents, and incidents involving equipment and heavy machinery are common causes of fatal injuries. Underground fires, entrapments, and handling of hazardous materials are recognized causes of fatal injury that are less common. Hearing loss, respiratory disease, and heat stress are prevalent occupation health hazards in mining (AngloGold Ashanti, 2013). Sexually transmitted diseases, particularly HIV, as well as "opportunistic diseases" such as tuberculosis are also prevalent in the industry (IIED, 2002, p. 65). Although the rates of work-related accidents as well as occupational diseases have been greatly reduced over the last few decades, further improvements are necessary in order to achieve zero harm (AngloGold Ashanti, 2013).

Education and training are important ways of improving occupational health and safety practices in the mining industry (ILO, 2002b). Governments also have an important role to play in "providing an enabling environment, defining the safety and health standards expected of the industry, assuring that those standards are being met, and

encouraging compliance through meaningful incentives and sanctions" (IIED, 2002, p. xiv).[6]

Occupational safety and health (OSH) tends to be very poor in the artisanal and small-scale gold mining sector, in which miners work outside of OSH legislation and enforcement (Buxton, 2013). Artisanal miners typically work in unsupported tunnels, drill and remove rock with inappropriate equipment, and wear only minimal or no protective clothing. While working they are exposed to dust, dangerous chemicals, noise and vibration, and poor ventilation, and are also susceptible to trips, cave-ins and rock-falls (ILO, 1999). Crude explosives pose an additional risk in underground gold mining (Larmer, 2009). Furthermore, sanitation, clean water and health-care facilities are often non-existent; malaria, typhoid, dysentery, tuberculosis, sexually transmitted diseases, malnutrition and substance abuse are common in the artisanal gold mining industry (Buxton, 2013).

Amalgamation of gold with mercury is a common way of processing and purifying crushed gold ore in the small-scale gold mining sector, as it is the cheapest and easiest method available (ILO, 2014). Mercury poisoning is associated with numerous health risks, including numbness of the extremities, seizures and mental disturbances, and hearing and speech impairment (Hinton, Veiga and Beinhoff, 2003).

Basic OSH measures and equipment, for example helmets, often represent unaffordable costs for subsistence small-scale miners (Hentschel, Hruschka and Priester, 2002). Accidents in small-scale mines are under-reported or not reported at all, as illegal operations try to avoid drawing attention to their activities (ILO, 1999). "A combination of lack of resources, lack of or non-application of safety regulations, lack of awareness, illiteracy, lack of training, inadequate equipment and remote location" all increase the likelihood of accidents in small-scale mines compared to the large-scale mining industry. Safety regulations for medium and large-scale mines have to be adjusted to small-scale mining contexts. Furthermore, there is a widespread lack of awareness regarding chronic occupational diseases, particularly the health risks of mercury exposure (Hentschel, Hrushka and Priester, 2003).

### *Wages and living wages*

Although there is widespread recognition of the need for a living wage, both an international definition of living wage and a methodology for calculating it are lacking (Anker, 2011). "In many parts of the world today, mine labour represents relatively high-wage work" (IIED 2002, p. 65). Nevertheless, the topic of adequate wages is often at the heart of heated collective bargaining negotiations in the gold mining industry. In the gold supply chain, the issue of wages and living wages becomes even more poignant, as the end product is of such high value. In South Africa, where trade unions in the mining industry are active and well-organized, the topic of a living wage has been central to collective bargaining between gold miners and employers. On the one hand, companies are reluctant to pay higher wages due to increased operating costs of gold mines and decreasing market value of gold. On the other hand, gold miners face high health and safety risks in their day to day work (Reuters, 2013). Another issue complicating the debate is the fact that senior executives in gold companies are often being paid "exorbitant salaries" in the eyes of mineworkers' unions (Whittles, 2015).

6 The ILO Safety and Health in Mines Convention, 1995 (No. 176) and Recommendation (No.183) are the international labour standards of greatest relevance to the mining industry; they are complemented by the non-sector-specific ILO OSH standards, including the Occupational Safety and Health Convention, 1981 (No. 155) and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).

Artisanal and small-scale gold mining is also a comparatively lucrative source of income. In Cameroon, for example, artisanal gold miners earn three times the national average wage, and as artisanal mining takes place mostly in the informal economy, the income earned is tax free and the revenue is immediate (Funoh, 2014). However, artisanal miners' income can also vary significantly, "ranging from considerable profit to significant losses" (Tieguhong, Ingram and Schure, 2009).

# 3. Governance for decent work in the gold supply chain

A multiplicity of governance systems and tools has sprung up in response to social and environmental problems in the gold supply chain. The number of different governance initiatives is reflective of the numerous actors involved in the gold sector. Public, private and social governance actors have taken action unilaterally and sometimes jointly, in order to raise social and environmental performance in the gold sector. These actors can reinforce each other's governance efforts in creating a strong regulatory environment for the gold supply chain. Whereas private actors (companies, industrial associations and cooperatives) can promote due diligence and good practices, social actors (NGOs and trade unions) can monitor the implementation of these private compliance schemes. Finally, public actors (governments and international organizations) can create the regulatory environment and minimum standards for actors in the gold supply chain.

## 3.1 Public governance

Public governance actors, namely governments and international organizations, have taken a number of initiatives to address social and environmental problems at different stages of the gold supply chain.

Gold-producing countries have attempted to assert control over informal gold mining in different ways. Governments' strategies have ranged from the criminalization of "illicit gold mining" to providing support for artisanal gold miners through capacity-building and formalization initiatives. In addition to broader initiatives, governments have also addressed specific gold mining-related problems, such as the widespread use of mercury, forced labour or child labour.

In Peru, the Government launched a National Commission Against Forced Labour as well as a National Action Plan to Combat Forced Labour, in 2007. The National Commission Against Forced Labour was created to coordinate actions among workers' and employers' organizations and various ministries. The ILO provided support to the Commission, which was directed by the Ministry of Labour. The National Action Plan includes measures to address the structural issues contributing to forced labour, as well as legislative reform, improvements to inspections, investigations in sectors where forced labour is concentrated, the development of a communications strategy to inform the public about forced labour and the implementation of an electronic system for processing complaints of forced labour. In 2008 the first inspectors specialized in identifying forced labour were trained by the Ministry of Labour, with support from the ILO (ILO, 2010).

In Papua New Guinea, the Small-Scale Mining Branch of the Mineral Resources Authority opened a Small-Scale Mining Training Centre (SSMTC) in 2009, with funding from the European Union Mining Sector Support Programme. The centre provides training on mercury and environmental management, occupational health and safety, mining and processing technologies and techniques, and the legal framework, among others. In 2011, the centre had trained 800 participants (SSMTC, 2011).

In Mali, the Government outlawed hazardous child labour in artisanal mines and in June 2011 adopted a National Action Plan for the Elimination of Child Labour in Mali. The Government has also been able to make some progress in improving access to education. However, the impact of the National Unit to Combat Child Labour has been limited due to lack of resources and consistent political support (Human Rights Watch, 2011).

In addition, destination countries for gold have taken legislative action forcing companies to disclose the use of conflict minerals, including gold, in their supply chains. In Section 1502 of the Dodd Frank Act (2010), the United States mandates such disclosure requirements for companies sourcing from countries in the conflict-ridden Great Lakes Region (the Democratic Republic of the Congo and its neighbouring countries). The European Union is also developing a similar conflict minerals disclosure proposal. However, these requirements only cover gold originating from specific countries (typically the Democratic Republic of the Congo), and more importantly, they mostly do not capture labour and decent working conditions.

There have also been calls for home States to better regulate the conduct of their multinational mining enterprises abroad, including gold companies, as well as to facilitate access to justice for foreign victims of corporate-related abuses. This has been especially pertinent for Canada, where many of the largest gold mining companies are incorporated (Simons and Macklin, 2015).

Switzerland, the most important country in terms of gold processing (as it hosts leading gold refiners), has entered into a public-private partnership with the Better Gold Association to “create a sustainable gold value chain from mine to market”. The project will channel Swiss support for social and environmental upgrading of gold producers in Peru (SECO, 2013).

Unfortunately, these various government initiatives are often not connected nor coordinated. Consequently, their impact is limited and important markets are left out of the scope of these efforts. Moreover, there are no mechanisms for monitoring and supporting their sustainability.

International organizations have taken an issue-centric approach towards regulating the gold supply chain. Each organization has tackled a certain problematic aspect according to its specialized sphere of action.

In 1999, the Sectoral Activities Programme of the International Labour Organization held a Tripartite Meeting on Social and Labour Issues in Small-scale Mines. The meeting covered safety and health, discrimination, child labour, legislation, and environmental approaches to small-scale mining, among other topics (ILO, 1999). As part of the follow-up to this meeting, a handbook on safety and health in small-scale surface mines was developed (Walle and Jennings, 2001), which has been widely used in ILO projects as well as those of other entities, and has been translated into a

large number of languages.[7] The ILO's International Programme on the Elimination of Child Labour (IPEC), has also addressed the problem of child labour in gold mining, for example through a project from 2005–08 entitled Prevention and Elimination of Child Labour in Artisanal Gold Mining in West Africa.

In 2010, the Organisation for Economic Co-Operation and Development (OECD) issued the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, and in 2012, the *Supplement on Gold* in an effort to improve supply chain traceability and due diligence along mineral supply chains. The Supplement on Gold addresses companies and gives step-by-step guidance on how to avoid contributing to conflict and serious abuses of human rights in the gold supply chain. However, both the Guidance and the Supplement only address gold sourced from conflict-affected and high-risk areas. Whereas their guidance is relevant, it does, unfortunately, not aim at fostering social and economic upgrading in gold supply chains overall.

In 2009, the United Nations Environment Programme (UNEP) initiated the process of negotiating a legally binding global treaty to protect human health and the environment from the adverse effects of mercury and mercury compounds (UNEP, 2013). The Minamata Convention on Mercury was formally adopted in October 2013. The Convention covers mercury releases associated with artisanal and small-scale gold mining and sets up control measures (ILO, 2014).

In addition to public governance initiatives, private and social actors have also become engaged in addressing problems in the gold supply chain.

## 3.2 Private governance

Private governance actors, including companies, industrial associations and cooperatives have engaged in improving social and environmental performance along the gold supply chain. Consumer awareness campaigns such as "No Dirty Gold" (Earthworks and Oxfam America, 2004) have prompted corporate social responsibility (CSR) initiatives in the private sector. Retail companies are typically more vulnerable to "naming and shaming" campaigns, due to their reliance on maintaining good customer relationships. Therefore, jewellery retailers have been more concerned with improving the public image of gold than companies farther upstream. Gold mining companies, which are sometimes embroiled in conflicts with local communities, also have an incentive for good public relations in order to retain their social licence to operate. Precious metal refiners (and traders), on the other hand, have few direct links to the public, and often operate below the radar of public scrutiny.

Many gold companies are actively trying to improve their public image through CSR initiatives in the areas of occupational health and safety, community and infrastructure development (building of health-care facilities), local hiring, and training programmes. Increasingly, gold companies go beyond health and safety, skills and community development programmes, and publicly commit themselves to respecting workers' rights, including freedom of association and collective bargaining. Although voluntary, codes of conduct can have significant legal effects within a company and its supply chain. At the very least, a public commitment towards respecting workers' rights does not just send a signal to the outside world, but may also resonate within the company

7 Languages include: Arabic, Chinese, English, French, Mongolian, Portuguese, Spanish, Urdu and Vietnamese.

culture. However, there is little information on the impact of these corporate social responsibility initiatives, apart from the companies' own CSR reports. In other words, there are independent resources to draw on in order to evaluate the effectiveness of gold companies' CSR efforts for social upgrading.

Jewellery businesses are also trying to improve their sourcing practices. In 2009, Cartier began partnering with the Goldlake Group, which owns Eurocantera, a gold mine in Honduras that integrates artisanal miners into their operations, has introduced cleaner extraction processes (Bendell, Doyle and Irwin, 2009), recycles 100 per cent of its waste and offers training and education programmes for miners (Copping, 2009). However, the mine provides less than 5 per cent of Cartier's total demand (ibid.). The overall contribution of such initiatives towards improving corporate practices in the gold industry is very limited, considering that jewellery retailers source only a very small amount of their gold from such "responsible" sources. Up to the present, these good practices are exceptions and far from representative of the gold supply chain in general, and are often perceived as a simple public relations tool to appease customers.

Industrial associations, in particular, have been actively trying to improve the profile of the gold industry by developing new standards and certification schemes that take into account social and environmental performance indicators. They have developed various "responsible gold" standards and trademarks, designed with different actors and stages of the gold supply chain in mind.

The London Bullion Market Association (LBMA), which represents the London market for gold and silver bullion, has established a globally recognized refining standard for the quality of gold and silver bars and has maintained the "Good Delivery List" of accredited refiners since 1987 (LBMA, 2014a). Its membership includes 145 companies, including traders, refiners, producers and service providers, thus spanning the entire gold supply chain. The LBMA could therefore have an extraordinary impact on upstream social upgrading in the gold industry. In 2012, the LBMA made Responsible Gold Guidance a formal requirement of "good delivery". It thereby moved beyond merely accrediting the quality of the gold and silver refineries deliver, to include also the way in which the precious metals are sourced. The Guidance is based on the OECD *Supplement on gold* (2012) for refiners, as well as the Swiss and the US Know Your Customer (KYC), Anti-Money Laundering and Combating Terrorist Financing regulations (LBMA, 2014b).

The World Gold Council, a market development organization for the gold industry, has developed the Conflict-Free Gold Standard to help companies improve consumers' confidence in gold by providing assurance that their gold is not contributing to conflict (World Gold Council, 2012). The Standard operationalizes the *OECD Due Diligence Guidance for Responsible Supply Chains for Minerals and from Conflict-Affected and High-Risk Areas* (2010). However, like many other CSR schemes, the Conflict-Free Gold Standard lacks a strong complaints process. Concerns about the accuracy of company reports have to be raised with the issuing company, as the World Gold Council refuses to "act as a certification body to validate Conflict-Free Gold Reports and investigate grievances" as that could "create potential conflicts of interest" (ibid., p. 3).

The Responsible Jewellery Council (RJC) was founded in 2005 by a cross-section of the diamond and gold jewellery business to reinforce consumer confidence in the jewellery sector by promoting responsible practices throughout the jewellery supply

chain (Bendell, Doyle and Irwin, 2009). The industry-led initiative aims at covering the entire diamond, gold and platinum group metals jewellery supply chains, from mine to retail (including refining). It now has more than 600 member companies (RJC, 2015). The RJC has developed a certification system that goes beyond the "conflict-free" requirement of the LBMA and the World Gold Council. The RJC voluntary Code of Practices sets out "responsible business practices covering human and labour rights, environment and business ethics" (RJC, 2013a, p. 6). The Code includes provisions on labour rights and working conditions, setting out guidance on issues such as working hours, remuneration, child labour, forced labour, freedom of association and collective bargaining, non-discrimination, and health and safety (RJC, 2013b). In 2013, the Code of Practices was updated to integrate the UN Guiding Principles on Business and Human Rights, the Minamata Convention, Free Prior and Informed Consent, annual reporting requirements, and sourcing from conflict areas, and artisanal mining.

As the RJC standards are voluntary and major non-conformances do not necessarily result in a suspension of certification, the standard has faced considerable criticism since its inception.[8] In 2013, a report by international unions and NGOs denounced the RJC standard as an "ineffective tool by which to create an environmentally and socially responsible supply chain in the jewelry industry" that "risks tarnishing, rather than burnishing the reputations of member companies" (IndustriALL et al., 2013, p. 7). The report *More shine than substance* criticizes key aspects of the RJC certification system, inter alia its "industry controlled-governance" and lack of representation of affected communities, trade unions, or NGOs on the Board of Directors and in the decision-making process; loopholes and inconsistencies in the certification requirements; inadequate and vague standards not reflective of best practices; as well as deficiencies in the auditing and complaint system (IndustriALL et al., 2013). The RJC standard has been particularly criticized for being "weak on labor", specifically "for doing little to protect workers' rights to join trade unions, not requiring RJC members to provide a 'living wage', weak grievance provisions, enabling children as young as 14 to be employed by RJC members if allowed by national law, and for allowing RJC members to do business with suppliers and others who use forced or child labor" (Mehta, 2013).

The criticism seems particularly related to the RJC standard's creation process, since it was not developed in a very inclusive multi-stakeholder process, and during the consultations a number of trade unions and NGOs abandoned the process (IndustriALL et al., 2013). However, despite its shortcomings, the RJC has demonstrated a will for improvement in its 2013 reform of the Code of Practices, and some organizations, for example Solidaridad, believe the RJC standard to have the potential to genuinely raise the industry's social and environmental performance (Henley, 2013).

In a number of countries, including Bolivia, Zambia, and Zimbabwe, joining gold mining cooperatives has become a viable alternative to conducting artisanal mining on an individual basis and to working in large-scale mining companies. The Gold Miners Association of Zimbabwe (GMAZ) is a relatively successful gold mining cooperative that is able to engage with government agencies and to advance the interests of its members in terms of both social and economic upgrading. It was founded in

8 If major non-conformances against the Code of Practices are found in the auditing stage, one-year certification status (as opposed to three-year certification) is granted, "to provide members with a year to work on corrective action and encouraging them to improve" (Responsible Jewellery Council 2013a, p. 7).

2004, bringing together small to medium gold miners from across the country. The cooperative supports the formalization of gold mining activities in Zimbabwe and promotes "technologically sound, environmentally friendly, socially responsible, profitable and scalable operations that create wealth, employment and stimulate economic activity" in all areas where its members operate (GMAZ, 2013). In addition, GMAZ engages with the Ministry of Mines and Mining Development and other relevant government agencies on gold mining issues.

The non-profit Green Gold Corporation (Oro Verde) is a pioneer in the "ethical gold mining sector". It was established in 2000, when Afro-Colombian miners in the Choco region of Colombia joined with social entrepreneurs to form the Green Gold Programme. Subsequently, Oro Verde developed its own local responsible gold mining standard, setting in motion a worldwide fairtrade movement around small-scale mining, and participated in the establishment of the Alliance for Responsible Mining. The founding of Oro Verde achieved local social, environmental and economic upgrading at the gold mining stage, by empowering communities and building capacity for implementing social, economic, environmental and labour standards, improving working and living conditions, promoting sustainable practices, and providing alternative livelihoods and skills training programs. In 2011, Oro Verde was certified by the Fairtrade and Fairmined standard for ecological gold (Alliance for Responsible Mining, 2011).

In Bolivia, the mining sector is dominated by cooperatives (Marston, 2013), whose number has risen further in recent years due to the increase in gold prices (Roca Paz, 2013). According to the Bolivian Ministry of Mining and Metallurgy, there were 60,000 miners working in cooperatives in 2013, compared to only 12,000 miners in the public and private sectors combined (Marston, 2013). The cooperatives in Bolivia are unique because of the political weight they carry and their willingness to assert their rights politically, and sometimes even violently (ibid.). President Morales of Bolivia supports mining cooperatives by initiating a number of political and constitutional reforms, such as giving cooperatives equal status alongside private companies and the Bolivian state mining company Corporación Minera de Bolivia (COMIBOL).

In 2010, the Cotapata Cooperative in Bolivia became the first mining organization in the world to receive the Fairtrade and Fairmined certification (International Co-operative Alliance, 2015). The cooperative was formed in 1991 out of a group of informal gold miners in the Cotapata National Park. By forming a cooperative, the miners have been able to achieve social upgrading in the areas of social protection and rights at work. Miners split the share of monthly profits equally among each other, and contracted workers earn three times the national minimum salary. Women have been able to join (despite superstitions that women bring bad luck in gold mining). All workers are insured in the event of accident or death. The miners hope that the Fairtrade and Fairmined premium will allow them to invest in the mine and to improve operations. In this way, social upgrading and economic upgrading can go hand in hand.

There is also a growing number of women cooperatives founded by and servicing the needs of women in gold mining. In Peru, "*pallaquera*" women, who sift through discarded ore to find remaining gold, have established women's organizations.[9] Pallaquera women perform their work informally and under difficult conditions, which is why they rely on the women's organizations for support. The two most established

9 The two most established pallaquera women miners' organizations are the Association of Women Ore Sorters of Cuatro Horas and the Association of Pallaguera Women of Santa Filomena, "Nueva Esperanza".

women's organizations have direct agreements with several mining companies, which help improve safety, transport and working conditions for the pallaquera women. They have statutes and work regulations setting out conditions for pallaqueo work, including working hours and safety equipment requirements (Orozco Zevallos, 2013). Moreover, the women are absolutely prohibited from bringing their children to their workplaces.

## 3.3 Social governance

In addition to public and private governance initiatives, social actors are also involved with monitoring and improving social and environmental conditions along the gold supply chain. Social governance actors, such as trade unions and NGOs, are important players when it comes to improving working conditions in the gold supply chain.

Trade unions, particularly the Global Trade Union Federation, and human rights NGOs including Human Rights Watch and Vérité, act as watchdogs of the gold industry by monitoring compliance with labour and human rights standards. They draw attention to human rights violations and serious decent work deficits within the gold industry, calling on corporations to modify their practices and on governments to take regulatory and punitive measures.

Human Rights Watch has drawn attention to child labour in the gold supply chain on numerous occasions, most recently in its report *Precious Metal, Cheap Labor: Child Labor and Corporate Responsibility in Ghana's Artisanal Gold Mine*s (2015). Human Rights Watch highlights risks in Swiss gold refiners' supply chains, linking the refiners to gold produced in Ghana with child labour. Significantly, the refiners (Metalor and Produits Artistiques Métaux Précieux – PAMP) had been audited against the "responsible gold" standards of the London Bullion Market Association and the former also against the Responsible Jewellery Council Code of Practices, and both had been found to be in compliance. This finding points to weaknesses of private compliance schemes in the gold industry, as well as highlighting the role of social governance actors in fortifying private governance systems.

## 3.4 Joint forms of governance

Joint forms of governance are built on cooperation and collaboration between different governance actors and stakeholders. At the heart of joint governance approaches in the gold industry lies social dialogue between key players of the gold supply chain. Due to the fact that joint governance initiatives take into account multiple stakeholders' perspectives, they can be more effective than unilateral initiatives by public, private and social actors respectively.

A number of public-private initiatives have been created with the aim to improving social performance along the gold supply chain. Switzerland's Better Gold Initiative takes account of the fact that almost 70 per cent of the global gold trade is conducted through Switzerland, which hosts most of the world's leading gold refiners and jewellers. In 2013, the Swiss Economic Secretariat (SECO) and the Swiss Better Gold Association, comprising a number of Swiss gold refiners and jewellers, formed a private-public partnership to support the formalization of artisanal gold miners in Peru (Dupraz-Dobias, 2013). By connecting miners directly with refiners and jewellers in Switzerland, Peruvian gold producers are able to secure more favourable prices for

their gold and Swiss businesses are able to market their improved social performance. The Better Gold Initiative has decided to work with the RJC and Fairmined in the context of supporting harmonization between related initiatives.

International framework agreements (IFAs) signed between MNEs and global union federations (GUFs) have become important instruments for improving working conditions and promoting good industrial relations (Stevis, 2010). In 2002, AngloGold Ashanti signed a global framework agreement with the International Federation of Chemical, Energy, Mining and General Workers Unions (ICEM). It was updated in 2009. By signing the agreement AngloGold Ashanti committed itself to respect inter alia the rights of freedom of association, the elimination of forced labour, the abolition of child labour, and the provision of a safe and healthy working environment (IndustriALL and AngloGold Ashanti, 2009). Employing 66,434 people (including contractors) in 2013 (AngloGold Ashanti, 2013) and having 20 operations in ten countries on four continents as well as further exploration programmes in 17 countries, the signing of this agreement represented a major achievement for the expansion of good labour and sustainability standards on a global scale. Despite these efforts, the company has been criticized for weak performance in these areas. In 2012 a report was published drawing attention to significant shortcomings in AngloGold's social performance, including disparity between how management treats workers across AngloGold's operations, unfair wage distribution, insufficient wage increases for workers, and insufficient safety precautions (Taal, 2012).

In 2001, the International Council on Mining and Metals (ICMM) was founded to improve sustainable development performance in the mining and metals industry, and today it brings together 21 mining and metals companies (including important players in the gold industry)[10] as well as 35 national and regional mining associations and global commodity associations (ICMM, 2015a). ICMM members are required to implement its Sustainable Development Framework, by integrating a set of ten principles and position statements into their corporate policies and operational practices, and setting up transparent and accountable public reporting processes (ICMM, 2015b). ICMM member companies annually report their sustainable development performance according to the rigorous standards set by the Global Reporting Initiative (GRI), which in addition to specific indicators, also includes specific sector disclosures; of particular relevance here are the G4 Mining and Metals Sector Disclosures (ibid.).

In 2015, the ICMM published a comprehensive guide on responsible sourcing for the mining and metals industry, called *Demonstrating value*. The guide takes a supply chain approach to sustainable development in the sector, and is built on the premise that all actors in the supply chain have a shared responsibility for the materials that they produce. The guide is structured around four overarching themes, namely "mapping the value chain", "developing effective programs and standards", "engagement with suppliers and value chain", and "data and information". Building on the concepts of "materials stewardship" and "circular economy", the new ICMM guide concludes by emphasizing the importance of recycling and the shift to a "closed loop material society".

These efforts represent a willingness of the private sector to make the mining and minerals sector more sustainable and to improve its respect for human rights.

10 ICMM's membership includes AngloGold Ashanti, Barrick, Glencore, Goldcorp, Rio Tinto and African Rainbow Minerals.

However, there is little information on the effectiveness of its Sustainable Development Framework on achieving social upgrading in the gold supply chain, making it difficult to evaluate the effectiveness of the ICMM as an agent of change.

In 2006, the Initiative for Responsible Mining Assurance (IRMA) was founded by a coalition of NGOs, minerals and metals purchasers, mining-affected communities, mining companies, and trade unions. It is currently developing the IRMA Standard for Responsible Mining, a multi-stakeholder and independently verified responsible mining assurance system to improve social and environmental performance of industrial-scale mines (IRMA, 2015). The draft standard was created in consultation with representatives from organized labour, NGOs, mining companies, communities affected and downstream users,[11] making it a true multi-stakeholder process. IRMA considers the standards the first to "specify[ing] best practice performance requirements that are applicable to all kinds of industrial mining worldwide", designed to be independently auditable at the mine site level, and that is supported by leading companies as well as worker organizations. Its overall objective is that industrial mining should respect human rights and aspirations of affected communities, provide safe, healthy and respectful workplaces, avoid or minimize harm to the environment, and leave positive legacies (IRMA, 2014).

The standard refers heavily to ILO Conventions, in particular the Health and Safety in Mines Convention, 1995 (No. 176) and the Prevention of Major Industrial Accidents Convention, 1993 (No. 174). It contains detailed provisions relevant to social upgrading, including on fair labour and working conditions; occupational health and safety; free, prior and informed consent; cyanide and mercury management; and a grievance mechanism and access to other remedies (IRMA, 2014). Although the IRMA standard is not targeted at the gold supply chain specifically, it could become a valuable instrument for improving working conditions in the gold industry, if implemented on a sectoral level. In contrast to the industry-led ICMM, IRMA is founded on a broader representation of affected stakeholders in the gold supply chain. Therefore, the IRMA draft standards may have a greater legitimacy and, ultimately, a larger impact.

The Alliance for Responsible Mining (ARM) is a multi-stakeholder, miners-based initiative established in 2004. It aims to "enhance equity and wellbeing in artisanal and small-scale mining communities through improved social, environmental and labour practices, good governance and the implementation of ecosystem restoration practices" (Iseal Alliance, 2012).[12] Together with its partners, ARM has developed and tested the Fairmined Standard for Gold and Associated Precious Metals in the artisanal mining sector (ARM, 2015a), which is modelled on the fair trade system for agriculture. The certification requirements define "responsible artisanal and small-scale mining" as "decent work in line with the ILO Conventions" (Fairtrade International, 2013, p. 40). The standard addresses some of the most serious social and environmental problems in the artisanal and small-scale gold mining sector, including child labour, forced labour, the use of mercury and cyanide, occupational health and safety and social protection. The certification system allows artisanal miners to bypass "unscrupulous" middlemen and to connect directly with Western jewellers thus securing a higher price for their gold (Hilson, 2008). ARM, representing artisanal miners' interests, complements

11 Private businesses purchasing mined materials for the products/services they provide.

12 ARM's activities include standard setting, miners' support and capacity building (to achieve formalization), responsible supply chain promotion, training and work on policy and market frameworks (ARM, 2015b).

ICMM and IRMA, which are directed mainly towards implementing better social and environmental practices in the *large-scale* mining industry.[13]

A number of joint forms of governance have sprung up to address social and environmental conditions in the gold supply chain; many of them only a few years old. They are indicative of a hopeful trend towards greater transparency, regulation and accountability.

# 4. Conclusion

## 4.1 Opportunities and challenges for social and economic upgrading

Different stages of the gold supply chain offer different opportunities for social and economic upgrading to go hand in hand. At the gold mining stage, artisanal miners have joined to form cooperatives, enabling them to pool their resources, which are invested into social and economic upgrading (safety equipment, better machinery, school facilities). Another way of achieving social and economic upgrading at this stage is for artisanal gold mining organizations to strive for certification (e.g. Fairmined) and to connect with jewellery retailers interested in buying "ethical gold". As a result of the certification and the direct relationship with the end buyer, artisanal gold producers would receive a premium on their gold, which could then be reinvested into improving productivity and working conditions. In addition, public (government and international organizations) and private non-profit actors (NGOs) should support these upgrading efforts with technical assistance.

Governments have an important role to play in creating the legal enabling environment to support the formalization of artisanal mining. If artisanal miners are criminalized, "they cannot reach responsible markets, and they cannot professionalise" (Jenkin, 2015). In addition to governments, the private sector, in particular jewellers in destination countries, "must likewise make efforts to invest in high-profile formalisation projects" (ibid.).

At the gold refining stage, enterprises and industrial associations (e.g. the LBMA) are now expected to be more vigilant about their sourcing practices. Situated in the middle of the gold supply chain, refiners can have the biggest impact on social and economic upgrading in the gold sector. Gold refiners have recently come under criticism for buying gold of dubious origin (Human Rights Watch, 2015). Due diligence and traceability schemes developed by industrial associations (and informed by the 2010 OECD guidance) are setting new sourcing standards, which may have an impact on working conditions (and lead to social upgrading) further upstream. However, the due diligence schemes capture only the gravest mining circumstances, such as gold mining in conflict zones or serious human rights violations such as child labour or forced labour.

13 The Communities and Small-Scale Mining (CASM) Initiative was launched in 2001 to improve coordination between various institutions and to find better-integrated, multi-disciplinary solutions to the complex social and environmental challenges facing small-scale mining communities. It was funded by the World Bank and the UK Department for International Development, and ultimately discontinued.

At the gold retailing stage, jewellers have begun paying attention to risks in their supply chains, partly due to consumer awareness campaigns such as No Dirty Gold. The formation of the Responsible Jewellery Council is an important step, although more could be done in terms of engaging with stakeholders. Individual retailers (e.g. Cartier) have also begun building relationships with individual "ethical mines" that adhere to environmental and human rights standards. As long as these flagship projects remain the exception and not the norm, there will be no wide-scale social upgrading in the gold supply chain. To address this, jewellers should engage constructively with gold producers to achieve social and economic upgrading upstream of the supply chain. Despite these efforts, there is still inadequate consumer demand for "ethical gold" products (Jenkin, 2015). Moreover, the universal value of gold means that there will probably always be a buyer for gold with obscure origins.

The greatest challenge to achieving sustained social upgrading in the gold supply chain is the fact that a large portion of the gold-producing labour force is working in a parallel shadow economy of informal artisanal mining. It is in this subsector that many of the most serious decent work deficits in the gold supply chain are found. However, regulating the artisanal gold mining sector has also proven to be one of most complex challenges for governments.

The gold industry as a whole is facing the challenge of rapidly depleting resources, which may exacerbate conflict between various actors in the gold supply chain in the future. Gold ore is increasingly costly to extract, and some allege that "peak gold" production may have already been reached (Saefong, 2015). The rise of the operational costs of gold extraction may have an impact on collective bargaining, as gold-producing companies are increasingly reluctant to increase wages.

The gold industry is considered to be 30 years behind other sectors in the quality of its supply chain management (Jenkin, 2015). The large number of informal actors involved in the gold supply chain, in particular small mines, intermediary traders and informal smelters, contribute to a non-transparent global gold supply chain. The physical nature of the precious metal also makes the origins of gold difficult to trace. Once a certain level of refining has been achieved, gold from conflict-affected areas, gold mined using child labour or forced labour, and gold coming from formal mines adhering to labour standards, are virtually indistinguishable from each other.

Some argue that gold mining is an inherently unsustainable industry, and that the negative social and environmental externalities of gold are too high to justify its continued exploitation. They would therefore advocate an end to gold mining altogether. Most gold is stored in vaults or kept as jewellery, while only a small percentage is actually used in the manufacturing, electronics and health-care industries. That small percentage of demand could arguably be covered through the supply of recycled gold.

Nevertheless, considering that the socially constructed value of gold is unlikely to change in the near future, it would be futile to advocate for abandoning gold mining altogether. Instead, policy recommendations should focus on how decent working conditions and sustainability in the entire industry could be achieved, and how to move supply chain actors towards responsible business conduct.

## 4.2 Policy recommendations and key issues for future social dialogue

Many of the governance initiatives are quite young, which is why it is difficult to assess the impact they may be having on improving working conditions in the gold sector. Independent monitoring and evaluation of their effectiveness is therefore necessary. There is also a lack of coordination between the different standard-setting initiatives put forward by various organizations. This has led to a patchwork governance framework for the gold supply chain. In order to truly transform the gold industry, cooperation between the various governance actors as well as multi-stakeholder engagement are crucial. Furthermore, the numerous initiatives and governance frameworks should be harmonized in order to achieve integration into a single governance framework for gold.

Participants in the gold supply chain (miners, mining companies, traders, refiners, retailers, banks) and governance actors (governments, regional and international organizations, industrial associations, non-governmental organizations, etc.) have a shared responsibility in ensuring that economic and social upgrading in the gold supply chain are promoted side-by-side. The best way to realize this responsibility is to work collaboratively and to come together in joint, multi-stakeholder governance initiatives.

Furthermore, the voices of workers and affected communities in the gold industry need to be strengthened. Legislative initiatives by destination countries to improve transparency in the gold supply chain (e.g. the Dodd Frank Act in the United States) were developed largely without input from the artisanal mining communities most affected by the change in regulations. Similarly, international and national initiatives would benefit greatly from the direct involvement of trade unions and cooperatives, as well as artisanal mining- and indigenous or local communities in their standard-setting and decision-making processes. The fact that gold mining leads to serious environmental degradation, which in turn affects the health of mineworkers and local communities, makes the participation of affected communities all the more crucial. Establishing grievance mechanisms at different levels (including at the company level and within transnational governance frameworks) would be an important first step in ensuring that workers' and communities' voices are heard.

Finally, governments, as public procurers of gold, also have an important role to play in ensuring that the gold they buy has been produced under sustainable and decent working conditions. A large amount of the above-ground supply of gold is held in reserve by governments and central banks.

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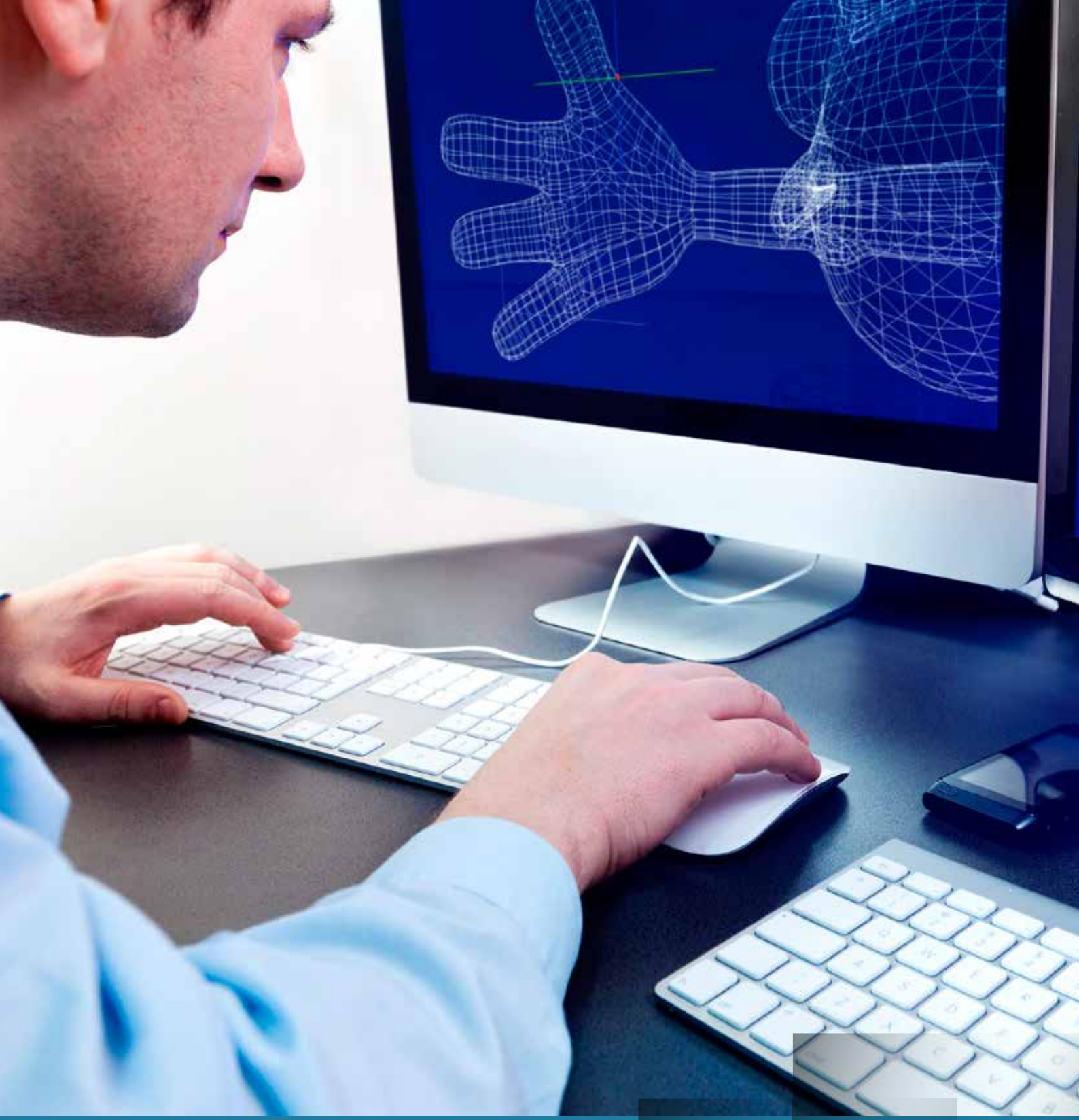

# Promoting Decent Work in Global Supply Chains: The Animation/VFX Industry

*Hyejin Yoon*

**Study 3**

# Study 3

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# Executive summary

Global outsourcing of the animation and visual effects (VFX) industry can be traced back to the 1960s. Low production costs, particularly for labour, have been the most important force driving the globalization of animation production. Outsourcing of the animation industry began in Japan, moving soon to other Asian countries. Work at the production stage was offshored to animation studios or so-called original equipment manufacturers (OEM), allowing major studios in developed countries to move to higher value activities in the global supply chain (GSC). Following the adoption of computer graphic imagery (CGI) in the late 1990s, changes in production processes have further influenced the GSC and its impact on decent work.

The advance of globalization of the animation/VFX industry has offered opportunities for economic upgrading in both developing and developed countries. In recent years, the growth of auxiliary markets has become an important source of value creation in the GSC, while production costs have been further reduced by shifting from permanent in-house systems to project-based production. However, the latter development has resulted in a rise of non-standard forms of employment; project-based contracts require intensive input over a short period of time, reinforcing irregular working schedules and contributing to high levels of stress. In addition, the promotion of social dialogue, including collective bargaining, is faced by challenges due to differences in work environments and employment relations. While jobs in the animation/VFX supply chains have been transferred to developing countries, social upgrading has not followed automatically. On the contrary, in both developed and developing countries, project-based production systems have been a driver of social downgrading.

Programmes and structures have evolved to govern particular aspects of GSC operations, but cross-border social dialogue will be critical in promoting decent work in the industry. Finally, the development of social security regimes which provide a basic social protection floor for all workers, including those in the freelance economy, may be a step forward in encouraging more young people to develop animation/VFX skills and engage in entrepreneurial activities in the sector. There is a clear role and need for governance mechanisms that support and promote integrated and mutually reinforcing economic and social upgrading.

# Abbreviations and acronyms

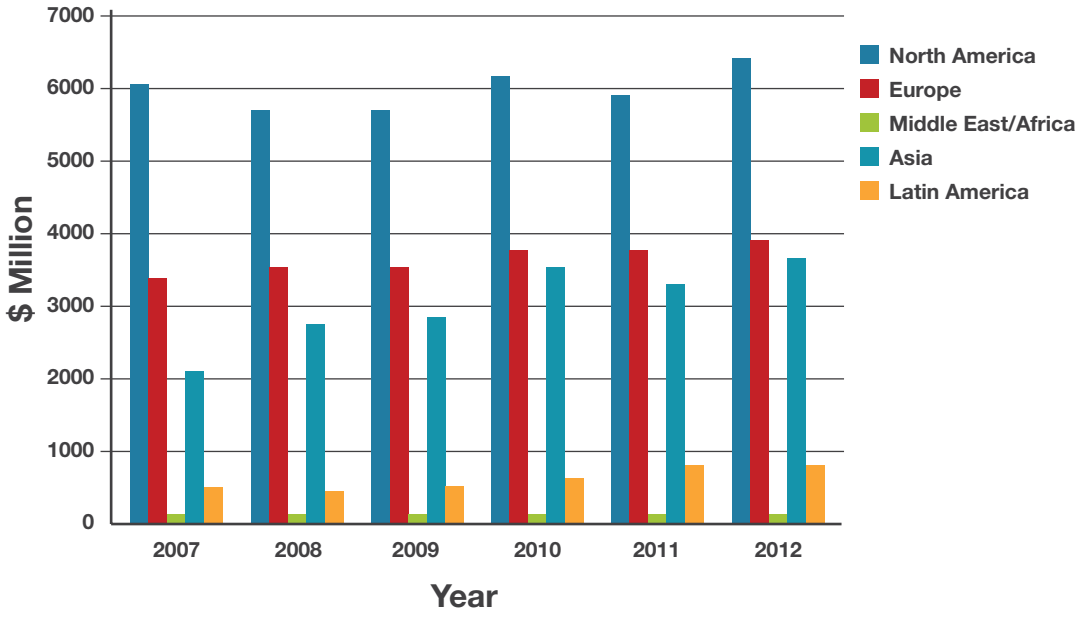
| | |
|---|---|
| **2D, 3D** | Two-Dmensional, Three-Dimensional |
| **AFTRA** | American Federation of Television and Radio Artists |
| **AKOM** | Animation Korea Movie |
| **BLS** | Bureau of Labour Statistics (United States) |
| **CAD** | Computer Added Design |
| **CGI** | Computer Graphic Imagery |
| **DVD** | Digital Video Disc |
| **GDP** | Gross Domestic Product |
| **GSC** | Global Supply Chain |
| **IATSE** | International Alliance of Theatrical Stage Employees, Moving Pictures Technicians, Artists and Allied Crafts of the United States, Its Territories and Canada (Animators' Guild) |
| **ILO** | International Labour Office /Organization |
| **IPDC** | UNESCO International Programme for the Development of Communication |
| **JAniCA** | Japanese Animation Creators Association |
| **JPY** | Japanese Yen |
| **KOCCA** | Korea Creative Content Agency |
| **KRW** | Korean Won (Republic of Korea) |
| **MAC3** | Malaysia Animation Creative Contents Center |
| **MNC** | Multinational Corporation |
| **MSC** | Multimedia Super Corridor (Malaysia) |
| **NASSCOM** | National Association of Software and Services Companies (India) |
| **O*NET** | Occupational Information Network (United States) |
| **OEM** | Original Equipment Manufacturing |
| **R&D** | Research and Development |
| **TNC** | Transnational Corporation |
| **UNESCO** | United Nations Educational, Scientific, and Cultural Organization |
| **VES** | Visual Effects Society |
| **VFX** | Visual Effects |

# 1. Introduction and overview of the animation/VFX industry

Over the last fifty years, the animation industry has developed into a global production system. Animated films were traditionally considered a stepchild of motion-picture films due to their limited audience compared to other entertainment industries, even though the animation genre developed an excellent reputation in some countries (Lent, 2001a; Vignaux, 2011). Throughout the 1940s-70s, only a few nations, such as France, Japan and United States were able to take advantage of relatively stable local markets. These countries also gained a reputation as producers of animated series for television. As animation production globalized in the 1980s, other countries have become involved in the global supply chain (GSC).

In developing countries interested in joining the animation supply chain, national and local governments have supported the industry, in particular post-production and visual effects (VFX); this is because the animation/VFX industry can create more jobs than other creative industries (European Commission, 2006) and it was felt that job growth in the industry would help to grow the GDP of national economies. Indeed, the animation industry has grown steadily since 2008 with the exception of 2011 (figure 1.1). North America is the largest market for animation consumption (43.0 per cent) followed by Europe (26.2 per cent), Latin America (5.7 per cent) and the Middle East/Africa (0.8 per cent). Asia's market share has grown continuously since 2007 as the economies of China and India have developed. The auxiliary animation market has also grown in China along with broadcast and box office markets. The total size of the animation market in China increased from US$3.3 billion in 2009 to 13.7 billion in 2012 (Coonan, 2014; Fan, 2013). The size of the VFX industry as a whole also has increased, with approximately 20 per cent of general production costs of all films (including live-action movies). The global VFX industry reached US$2.6 billion in 2012 (Grage, 2015).

**Figure 1.1: The animation industry, market size by region, 2007–12 (million US$)**




Source: KOCCA, 2014.

Demand for VFX has increased because movies that use it have been successful at the box office (Parker and Cox, 2013); in recent years it has become the most important and basic component of film production in all movie genres (Curtin and Vanderhoef, 2015).

Since computer graphic imagery (CGI) is widely used in both animation production and VFX, some studios have embraced both techniques. The distinction between animation studios and VFX studios is thus not always clear. This is due to several reasons. The required computer skills and training for multimedia artists are similar (BLS, 2014). For example, Occupational Information Network (O*NET), a free database which is funded by the US Department of Labor, have combined the skill set for animation with VFX production: the single occupational category "Multimedia artists and animators" is used for the animated film and other multimedia industries. According to O*NET, the major task in this occupation is creating two- or three-dimensional images using computer animation or modelling programmes. Workers need to know computer added design (CAD) software, such as Autodesk 3ds Max Design and Adobe Systems. Moreover, some of them are expected to be able to research and create new projects, and to develop storyboards for important scenes in animated films. The skill sets and abilities commonly required in animation and VFX projects overlap in many ways. Thus, many animation studios do not restrict their projects to animation and have expanded to VFX projects for live-action films or commercials.

## 1.1 A brief history

In the early days, animated films had a high level of artistic and aesthetic content; they were not designed as children's films (Bendazzi, 1994). Animators completed all production tasks, while in-house production systems dominated (Bryman, 1997). In some countries, artisanal-style animated films were produced for local audiences. For example, the animation industries of Argentina and Czechoslovakia had excellent reputations before the 1940s.

The first feature-length animated film was produced in Argentina in 1917, and animation flourished there in the 1930s (Bendazzi, 1994). However, this early boom dwindled because the movie industry struggled with censorship by military governments and with economic instability. Soon the animation industry lagged behind, and animated TV series from Hollywood have dominated broadcasting in Argentina ever since. Argentina has become an animation outsourcing hub tightly connected to Canadian and US animation studios (Bendazzi, 1994).

Czech animated films flourished before the 1970s (Bendazzi 1994). Government funding supported the growth of the industry as a means of propaganda, but strict censorship and the influence of foreign animated films such as Disney cartoons restricted the growth of the independent industry (Joschko and Morgan, 2008; Palonkorpi, 2014). Foreign influences changed local audiences' tastes, and local animation producers lost their comparative advantage. In addition, decreasing state funding and the privatization of animation studios in the Czech Republic after the 1990s led to a deterioration in local animation production. Animation production in the Czech Republic has specialized more on outsourcing from other European countries, due to cultural similarities (Deith, 2013).

Early animation production was labour-intensive because animators were required to draw backgrounds for each scene. When they began to use transparent sheets

for drawing backgrounds under the Bray-Hurd system (celluloid (cel) animation process),[1] this change in the production process resulted in dramatic savings of time and labour, particularly in the US animation industry (Bryman, 1997; Wright, 2005). Mass production of animated films based on assembly-line production dominated after adopting the Bray-Hurd system (Furniss, 1998). In addition, less-skilled animators replaced the skilled workers who had played a major part in animation production. These production processes also brought about the growth of the US animation industry by enabling a weekly supply of animation series.

The widespread availability of home television sets after World War II facilitated the growth of the animation industry in the United States. Post-war economic development brought higher incomes and increasing demand for leisure to Americans, whereupon the entertainment industry responded. In particular, the demand for TV animation series increased. Major movie studios such as MGM set up their own animation studios based on in-house production systems instead of contracting with animation specialists. However, these animation studios paid low wages and did not provide good working environments for animators (Cohen, 1997; Perlmutter, 2014). Many major movie studios treated animation studios as less important units, as compared to live-action films. In addition to poor working conditions, some animation studios omitted animators' names in the end credits, and discrimination against animators in different departments was common in the industry.

Increasing dissatisfaction led to a series of strikes in 1937 by newly-unionized animators in the Fleischer studio, and in 1941 by the animators at Disney (Sito, 2006). As a result, many animation studios relocated to areas where unions were weak, including establishing offshore animation production centres in Japan and Eastern Europe (Yoon and Malecki, 2010). For example, the Hollywood animation studio Hanna-Barbera began to produce TV animated series in eight different countries, including Australia and the Philippines between the late 1970s and early 1980s following strong union action by animators in New York, Hollywood and Los Angeles (Sito, 2006). Outsourcing then also followed in post-production such as VFX due to diseconomies of scale (Parker and Cox, 2013). Thus, offshore outsourcing of animation production became more common in the 1970s, which resulted in the geographic dispersion of the animation/VFX industry (Cohen, 1997; Lampel and Shamsie, 2003).

Global outsourcing of the animation industry began in Japan, moving soon to other Asian countries such as the Republic of Korea, the Philippines and Taiwan (China) (Lent and Yu, 2001; Yoon and Malecki, 2010). For example, up to 70 per cent of the outsourcing work from Disney was sent to Taiwanese animation studios such as Wang Films, a company involved in approximately 250 animation projects annually during the heyday of outsourcing before 2000 (Yu, 2003). The most frequently outsourced tasks were inking and colouring – repetitive and monotonous work in the production stage (Lent, 2001b; Tschang and Goldstein, 2004; Yoon and Malecki, 2010). Such work required intensive labour but not a high level of education or training, so many young people who completed a short training course at private training institutions or had no further training easily got jobs from local specialized animation studios.

The Republic of Korea and Taiwan (China) earned good reputations as international animation subcontractors due to entrepreneurial animators from these regions who

1 The Bray-Hurd system was a new animation production technique that used transparent celluloid sheets. Under this system, animators did not need to draw every single detail of each scene, such as the background. This brought savings in time and cost, and enabled the mass production of animated films.

had worked in Hollywood studios returnig to their home countries and founding studios specialized in subcontracting (Lent, 2001b). James Wang of Taiwan (China) and Nelson Shin of the Republic of Korea drew on their previous networks with Hollywood studios such as Hanna-Barbera and Warner (Chang, 1998; Lent, 2001b). Nelson Shin's AKOM (Animation Korea Movie) has been a subcontractor for The Simpsons since 1989, which has invigorated the growth of the animation industry in Asia.

Both Japanese and American animation studios have set up offshore animation production facilities in Australia and the Philippines (Wright, 2005). For example, Toei, a Japanese animation studio, has run Toei Animation Philippines since 1986, maintaining close connections with the branch including employee training to create its unique style of animation (Lent, 2001b; Tschang and Goldstein, 2010). Before 2000, Japanese offshore production facilities also existed in the Republic of Korea, but these were more independent even though they have maintained their partnership with the parent studios in Japan (author's interview with a South Korean animator, 20 June 2013).

## 1.2 The current global supply chain: Influence of computer graphic imagery (CGI)

Following the adoption of CGI in the late 1990s or early 2000s, changes in the production and working processes in the animation industry have influenced the global supply chain (GSC) in a number of ways. First, countries such as China, India, Malaysia and Thailand have entered the supply chain (Lent, 2009; Li, 2010; Niracharapa, 2014; Westcott, 2010; Yoon and Malecki, 2010). This dispersed GSC has reduced production costs, in particular labour costs. This geopraphical diffusion of global animation production resulted in the destruction and decrease of jobs in Japan, Republic of Korea and Taiwan (China) among less-skilled and "in-between"[2] animators. For example, jobs such as rough drafting went to Chinese animation studios that offered a shorter working schedule with half of the labour costs (Okeda and Koike, 2011). The average salary of Indian animators in their early career is US$2,421.72 while in 2014 the median salary of US animators was US$63,630 (O*NET, 2014). However, approximately 10 per cent of American animators earn less than US$34,860 (BLS, 2014).

Second, adopting CGI has required skills changes for animation production throughout the entire GSC (Westcott, 2010). Before 2000, most outsourced animation work only required short-term training by employers. Now, adays educational institutions provide more formal training programmes with a minimum of two years at university level (Boxer, 2014; Burman, 2007; KOCCA, 2014). The major skills that students learn from these professional training courses are computer programming skills for 3D software. In addition, countries such as China and India that offer more highly specialized computer programming have become important outsourcing destinations.

Third, multinational media corporations (MNCs) have influenced the global supply chain of the animation industry through mergers and acquisitions. US-based MNCs usually hold animation units within cable channels for broadcasting their animated films (table 1.1). In addition to cable channels, US-based MNCs own international distribution networks. For example, the Walt Disney Corporation runs its Disney

2 In-between animators draw scenes to connect major scenes that have already been drawn by head animators.

channel in many different countries, and Viacom owns Nickelodeon, another cartoon-specialized cable channel.

**Table 1.1: Animation studios and parent media companies, 2015**

| Transnational multimedia companies | Animation studio unit | TV network | Titles of recent major animations (full-length or TV series) |
|---|---|---|---|
| The Walt Disney company | Walt Disney Animation Studios<br>Pixar<br>Marvel Animation | Disney Channel | Inside Out (2015)<br>Frozen (2013) |
| Warner Brothers | | Cartoon Network | The Lego Movie (2013)<br>Scooby-Doo (since 2001) |
| Sony Pictures | Sony Pictures Animation | Animax (Austria, Germany, Japan, Rep. of Korea, United Kingdom) | Cloudy with a Chance of Meatballs 2 (2013)<br>The Smurfs 2 (2013) |
| Viacom | Paramount Animation | Nickelodeon<br>Nick Jr. | SpongeBob Square Pants (since 1999) |
| NBC Universal | Discovery Family (US)<br>Discovery Kids (Asia, Australia, Latin America) | Illumination Entertainment<br>Universal Animation Studio | Minions (2015) |
| Fox | Blue Sky Studios<br>20th Century Fox Animation | Fox Broadcast Company | Rio 2 (2014) Ice Age: Continental Drift (2012) |

Fourth, since international distribution is limited to major MNCs, some non-MNC animation studios have chosen an alternative distribution strategy. Even though Japanese animation has a reputation for producing good content, these studios do not own worldwide distribution networks. The search for regional distribution partners is therefore important to Japanese animation studios and other non-western media companies (Iwabuchi, 2002). Many studios based in different regions attend animation film festivals to sell their TV series to agents and distributors in different regional markets.

Fifth, various other strategies, such as partnerships among different companies in various places, coproduction, and joint ventures, are becoming more and more common (Hoskins et al., 1995). Coproduction in the film industry means that a production team is comprised of two or more different countries. In addition to funding, coproduction can include a diversity of workers with different nationalities, film locations in different countries under coproduction agreements, and sharing other resources

between/among production groups. The aim of coproduction varies in each case (Mossig, 2008). For example, countries outside the United States are not only markets for direct distribution by Hollywood but also production sites for other platforms such as DVD/video and TV.

Animation production cannot be separated from its cultural context or from the regulations and policies of its domestic market. For example, Canada and France strongly subsidize their national film industries, including animation (Miller et al., 2005). Coproduction has been adopted mainly to explore global markets, to identify local partners and to provide effective marketing by multinational media conglomerates. On the other side of the contract, local studios gain knowledge, production know-how and technology, and build their reputation through the coproduction (Lee, 2015; Yoon and Malecki, 2010). In addition, this strategy is a way of adjusting their businesses to the specific government regulations of the local market. In recent years, many local and national governments have adopted strict regulations and provided incentives to local and foreign media companies to coproduce in order to protect the local animation industry (Peskin, 2014).

Sixth, the growth of auxiliary markets has become an important source of value creation in the animation/VFX GSC. Sources of revenue are more diversified than before, and the auxiliary markets are more important to the animation studios (table 1.2). Home entertainment is one of the most common of the auxiliary markets, but other types, such as book and music tie-ins and the licensing of various consumer products to all age groups are also popular. MNCs such as Disney focus on character licensing through mergers and acquisitions with other animation studios: Pixar in 2005, Marvel Studios in 2009, and Lucas Films in 2012 (The Walt Disney Company, 2014). In the case of the merger with Lucas Films, revenue from films in 2012 reached US$199 million, but the total amount from licensing and publishing surpassed it at US $382 million (Leonard, 2013).

**Table 1.2: The growth of auxiliary animation markets, The Walt Disney Company**

| Type | Item |
|---|---|
| Home entertainment | • Pay-per-view (PPV)/video-on-demand (VOD)<br>• Subscription on video demand (SVOD)<br>• DVD/Blueray |
| Merchandising | • Toys<br>• Apparel/footwear<br>• Home decoration/furnishings<br>• Stationary<br>• Accessories<br>• Health and beauty<br>• Food<br>• Consumer electronics<br>• Trading cards |

| | |
|---|---|
| Publishing | Music<br>• CD/ single<br>• License fee from live entertainment events<br><br>Books<br>• Children<br>• Magazines<br>• Comic books |
| Games | • Mobile<br>• Video games |
| Others | • Broadway musicals<br>• Parks and resorts<br>• Retail chain shops |

Source: The Walt Disney Company, 2014.

# 2. Economic and social upgrading and downgrading

The literature distinguishes between social and economic upgrading in GSCs. Selwyn (2013) states that economic upgrading refers to "firm-level competitiveness and profitability" (p. 79). Four different types of economic upgrading are categorized (Barrientos et al. 2010): process, product, functional and chain upgrading.

Process upgrading brings more efficiency into the production process through changes such as automation of the process or replacing skilled labour with capital. In the animation industry, process upgrading has occurred through changes of technology from hand-drawn traditional techniques to CGI that is more dependent on capital.

Product upgrading refers to requiring "advanced product types" (ibid., p. 6), and often an increase in higher-skilled jobs. As product upgrading occurs in the animation/ VFX industry, the demand for more skilled workers trained in formal programmes has increased.

Functional upgrading occurs within GSCs where firms change the mix of activities they perform towards higher value-added tasks. In the animation/VFX industry, higher value capture activities are more related to the possession of intellectual property and success in auxiliary markets. The growth of these markets has become an important source of value upgrading as well as of value creation, because they have contributed to an increase in output value of the industry. Thus, many animation/VFX studios have exchanged their subcontractor role for that of a larger animation studio, creating content to make profits from auxiliary markets. In other words, many animation studios remove some elements from the in-house production system to specialize in planning for capturing high-value tasks (Yoon, 2015).

Chain upgrading means changes towards "more technologically advanced production chains" (Barrientos et al., 2010, p. 6) and involves moving into new industries or

product markets. The animation industry has extended its market from theatrical animated films to various platforms through the use of digitization of contents. Thus, previous skill sets, such as the colouring by hand that used to be required in animation production, are no longer a necessary techniques in current animation production. The process of animation production described in section 2.1 can provide better insight into the economic upgrading of the animation industry.

Lastly, social upgrading is "the process of improvement in the rights and entitlements of workers as social actors, and enhances the quality of their employment" (Barrientos et al., 2010, p. 7) and refers to the gradual process leading to decent work in GSCs. This includes all kinds of improvements in quality of work, such as labour standards and conditions. The ILO (1999) has identified four components of social upgrading in its Decent Work Agenda: employment, standards and rights at work, social protection and social dialogue. Barrientos et al. (2010) also divided social upgrading into two different types, measurable standards and enabling rights. Measurable standards are easily quantified, for example wages and working hours, while enabling rights refer to different categories such as freedom of association, and the right to collective bargaining (ibid.).

## 2.1 Economic upgrading and downgrading

The advent of CGI and the influence of MNCs has changed the animation industry GSC since the 2000s. The major reason for globalizing the industry was, as we have seen, saving production costs and particularly labour costs. Time-consuming and repetitive low-skilled tasks were transferred to offshore animation studios, but the main elements of production including planning stayed in the major countries, for example Japan and the United States. The more recent expansion of GSCs in the animation industry is the result of an increase of efficiency in animation production (production upgrading) and functional upgrading through specialization of more high value-added tasks related to ownership of intellectual property rights in developing countries. In addition, major production elements including planning and managing intellectual property in auxiliary markets can add high value in GSCs.

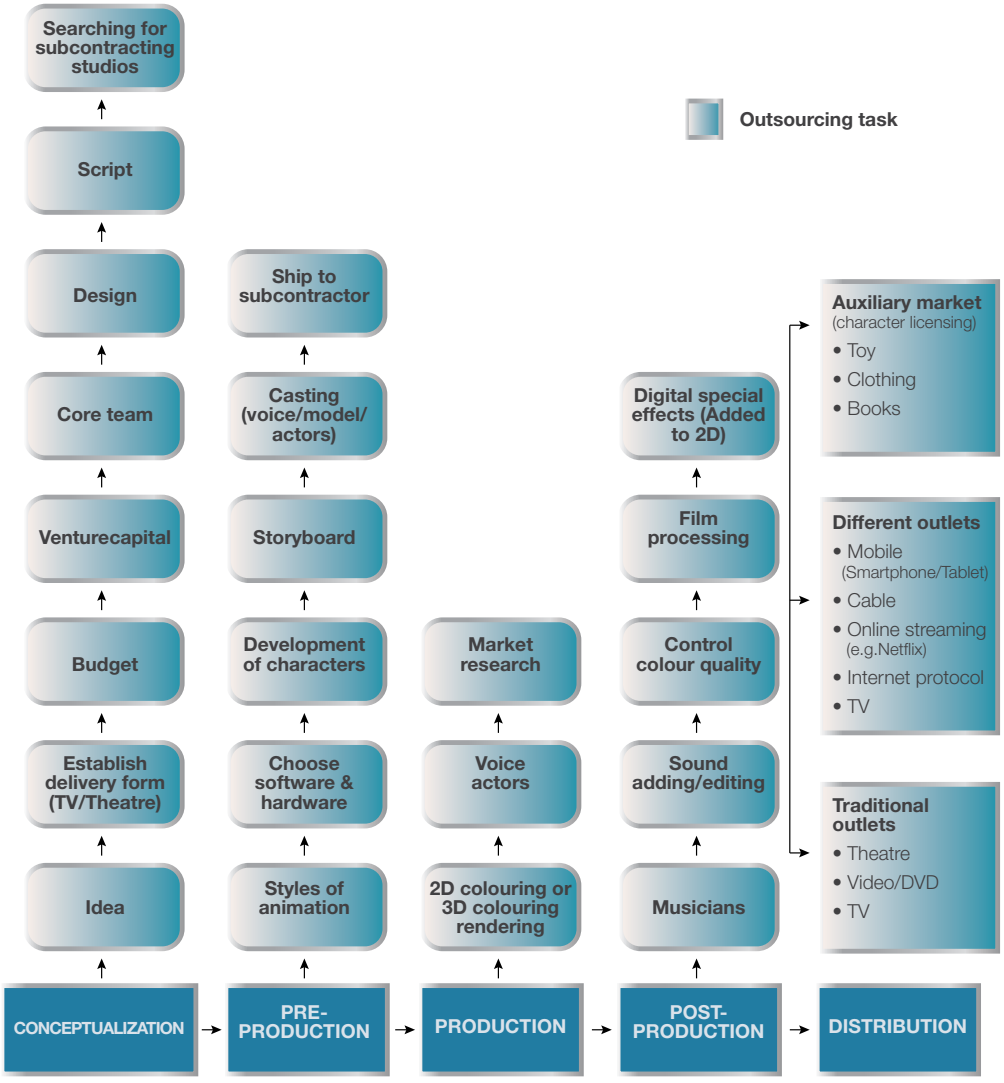
### 2.1.1 The animation production process

Understanding the social and economic dynamics of current animation requires an understanding of the typical animation production process. The creation of an animated film comprises five stages: conceptualization, pre-production, production, post-production and distribution (figure 2.1). The first stage, development (conceptualization), is the beginning of the entire production process. At this point, a piece of a story and main characters are visualized and developed by original writers or directors. For more systematic development of the story, producers often hire professional story editors (Wright, 2005). In addition to the story, the budget, schedule, length of movie or episode (pilot episode for TV series), other business-related planning, and basic concepts of artwork will be done at this stage (Tschang and Goldstein, 2004). The original writers or directors have to lock in their financial sources, and develop the production plan, including numbers of scenes, story plot and characters, as detailed as possible. Before the adoption of CGI production techniques, most tasks in this stage were rarely outsourced to other studios, but since 2000 the development of characters and storyboards has been passed on to other companies more frequently. Highly skilled workers who are specialized in the creation of quality content are an important factor in competitiveness, so many animation studios have

made efforts to upgrade their work from simply production to high-value added functions such as generating ownership of intellectual property rights.

The second stage is pre-production. Key activities at this stage are visualization and making a style guide; that is, the story becomes visualized. Here, the production team, purchaser, and distributors must begin to work together. Additionally, a voice-over audio track is recorded, from which artists will make the animation based upon this and a style guide (Raugust, 2004). Designers make decisions on various characters and other details such as background design. This stage can take many months, even up to a year. However, good pre-production planning can reduce production costs and time at later stages. Product and process upgrading are major components of building competitiveness within GSCs in this stage. For example, some animation studios in the Republic of Korea have made efforts in the production of original TV animated series through brand marketing, and have become successful in a niche market that focused on pre-school children instead of entering into hard competition in the theatre market with transnational corporations (TNCs) (Yoon and Malecki, 2010).

**Figure 2.1: The animation production process**




Source: Adapted from Yoon (2008) and Yoon (2015), and modified by the author.

The third stage – production – is where the globalization of the animation industry has mainly taken place (Yoon and Malecki, 2010). The labour-intensive work of making traditional, cel-animated film is often subcontracted to animation studios in other countries. Storyboards and characters are planned by the major studios, such as Disney, and the subcontracted studios work to a strict schedule. As mentioned before, the outsourcing of storyboards and design of main characters has increased. Production times vary by project; the production phase on 3D animated films usually takes longer than on 2D animated films.[3] For a full-length feature film, the rendering process (calculating the position of every character's body parts for each expression or movement) can take more than a year of round-the-clock calculation. For Madagascar – which depicts the adventures of animals transplanted from a zoo into the wild – DreamWorks' computer centre (or "render farm") ran seven days a week for a year and a half. Saving production costs, and particularly labour costs through subcontracting low-skilled jobs and the use of a project-based contract system with freelancers, is the major strategy to create efficiency in this stage. Process upgrading occurs in animation studios in developed countries.

The final stage is post-production. Technological mistakes that may have been made in the previous stages are corrected in editing at this stage. Sound is added, as well as titles and credits. Post-production includes many tasks: sound effects and sound editing, colour correction, retakes and recording sessions, title and credit approval, negative cutting, creating textless versions for foreign markets, quality control, and video duplication or film processing (Raugust, 2004). Prints to exhibit in theatres are copied at this stage. In addition to copies of the final version, other information such as scripts and lyrics of songs in the films are delivered together. The tasks in the post-production stage require high-end services, so that this stage usually stays in developed countries with long years of experience and capital for developing the required technology. Functional and chain upgrading are thus important in this stage.

### 2.1.2 Process upgrading in outsourcing countries

As explained earlier, changes in the production process – from an artisan style to a mass production system – have resulted in process upgrading of animation production. In addition, its geographical expansion has been driven by global outsourcing. Job creation in developing countries has been a positive impact of the global outsourcing of animation production. Workers in subcontracting countries are mostly young and low-skilled, and usually accept lower wages than the labour force in France or the United States. Economic upgrading has occurred in outsourcing countries in Asia such as the Republic of Korea and Taiwan (China) (Lee, 2015; Tschang and Goldstein, 2010; Yoon and Malecki, 2010). The number of employees in the South Korean animation industry increased from a total of 3,580 in 2005 to 4,503 in 2012 (KOCCA, 2014).

The process of outsourcing of animation production to newly developing countries is considered to be original equipment manufacturing (OEM): a way of producing a certain product based on the guidelines from companies in different countries. In this system, outsourcing companies do not participate in any design or conceptual

3 In general, nine to twelve months are needed to make a 2D TV series and 18 to 24 months for a 2D theatre film. For production of TV animation series, a pilot episode, usually the first in the series, is made before the première date. The remaining episodes are made while the first parts of the series are on air. In the case of a TV series made with CGI, animators spend six to eight weeks on one episode (Raugust, 2004).

planning in pre-planning stage. Even though the majority of the work in the production stage is carried out in these outsourced countries, audiences do not know where the animation production has taken place, since under the OEM system the names of the Asian subcontractors are not listed in the end credits. In many cases, these subcontractors are hidden contractors. As a result, process upgrading occurs in the pre-planning stage rather than the production stage.

Long-time international subcontractors such as companies in Canada, Ireland and the Republic of Korea have upgraded their status in the global animation industry, in particular animated TV series. In many cases, this economic upgrading is a distinctive change. The highest value capture in GSCs occurs in pre-production and in auxiliary markets, so these three countries have supported an increase in local content and higher revenue from intellectual property through the initiative of the media industry (Yoon, 2015; Lee, 2015). They have promoted the growth of the animation/VFX industry through providing production subsidies if the animated films contain a certain percentage of local resources, such as a minimum quota for local labour. However, more typical outsourcing work has been transferred to other countries which provide even lower production costs. In China, 70 per cent of animation studios focus on outsourcing projects for foreign animation studios in the Republic of Korea and Europe, as well as in Taiwan (China). In particular, the Chinese Government selected the animation industry as among key industries for the Chinese economic development plan in 2010 (Fan, 2013).

Despite emerging newcomers in the animation industry, long-term outsourcing partnerships still maintain control and coordination. For example, animation studios in Japan have a long-term relation with studios in the Republic of Korea, and have built strong trust between them. As a result, the production partnership/outsourcing with foreign companies for over three decades has enhanced production capability and know-how (Tschang and Goldstein, 2010; Van Egeraat, O'Riain and Kerr, 2013; Yoon and Malecki, 2010). Thus, outsourcing work that requires high-level technique still remains with long-term outsourcing contractors in the Republic of Korea and Taiwan (China).

In addition, inflows of human capital, especially young and new animators with university degrees in animation-related programmes, have invigorated the industry and led to an increase in the number of original animated films, full-length TV specials and TV series. The training of these young animators is different from the previous direct training conducted by companies. New skills such as creating new stories/characters, or programming for CGI, are increasingly important (authors' interview, 9 June 2013). In addition, government support for the production of original animated films has influenced the increase in the amount of original production in the Republic of Korea (table 2.1). The growth rate in sales of original animated films was 12.6 per cent between 2010 and 2012, although total sales of outsourcing production have decreased continuously since 2010 (-6.2 per cent).

**Table 2.1: Republic of Korea, sales of animated films, 2010–12 (US$ millions)**

| | 2010 | % | 2011 | % | 2012 | % |
|---|---|---|---|---|---|---|
| Original animated films | 195.5 | 66.3 | 206.0 | 67.2 | 220.1 | 69.3 |
| Outsourcing | 97.5 | 33.1 | 94.5 | 30.8 | 91.5 | 28.8 |
| Online animated films | 1.8 | 0.6 | 5.8 | 1.9 | 6.2 | 2.0 |
| | 94.8 | 100.0 | 306.3 | 100.0 | 313.73 | 100.0 |

Source: KOCCA, 2014.

Interactions between traditional outsourcing specialized animation studios and new CGI start-ups rarely occur. A Korean director who has produced a series of short animated films using CGI explained that his company does not want to hire employees who are familiar with outsourcing work, because these workers find it difficult to switch from typical Japanese animation style to other styles of modelling and design (author's interview, 6 June 2013). The director also pointed out that while high profits can still be made in traditional, outsourcing-specialized Korean animation studios, the salaries of overall individual animators in the studios are still low, and the working environment has not improved.

In the 1980s in the Philippines, all animation studios were owned by foreign companies, but from the 1990s a number of locally-owned studios were set up. Since then, there has been growth in the numbers of both foreign and local animation studies (table 2.2) despite lower competitiveness compared to other sectors such as call centres. Outsourcing projects from TNCs are major revenues for the domestic animation studios; this is driven by the prevalence of English-speaking labour and the long history of outsourcing compared to newcomers.

**Table 2.2: Philippines, growth in numbers of animation studios, 1980–2010**

| | 1980-89 | 1990-99 | 2000-10 |
|---|---|---|---|
| Owned by foreign firms | 6 | 12 | 30 |
| Domestic studios | 0 | 8 | 20 |

Source: Philippine Exporters Confederation, 2011.

A strategy of coproduction has helped to upgrade animation production in the traditional outsourcing countries. Coproduction benefits both MNCs and smaller local studios with limited resources in several ways.

First, a quota system is commonly used to protect locally produced content. Every country requires a certain percentage of domestic investment in order for the film to be classified as local. In the Republic of Korea, a film is defined as local if more than 30 per cent of the total production cost comes from local funds (KOCCA, 2014; Lee, 2015).

Second, coproduction between local and global actors is dominant in the animation GSC (Lee, 2015). China has the second largest market in the world and plays an important role in global animation production. Skilled and affordable labour in Chinese animation studios increasingly attracts outsourced work from foreign animation studios, and the animation industry has grown rapidly (Peskin, 2014). The Chinese Government has actively encouraged the growth of original/local animated films through coproduction, but the production of original animated films has lagged because of the smaller market for local animation compared to live-action films. Also, strong government censorship limits content. Thus, coproduction is an alternative to nurturing the capacity of the industry to carry out the entire process from pre-production to licensing (Fan, 2013).

Third, coproduction reduces risks. In Japan, for example, animated films are commonly produced by a committee comprised of several companies from various sectors, such as animation production, toys, music entertainment and venture capital (Sevakis, 2012). The main goal of the production committee is to obtain sufficient financing before the production stage. Revenues from box office, broadcasting and licensing are shared, based upon how much each member of the committee invests beforehand (KOCCA, 2010). Animation production companies can thus reduce risk through this system.

## 2.2 Social upgrading and downgrading

### 2.2.1 Skills

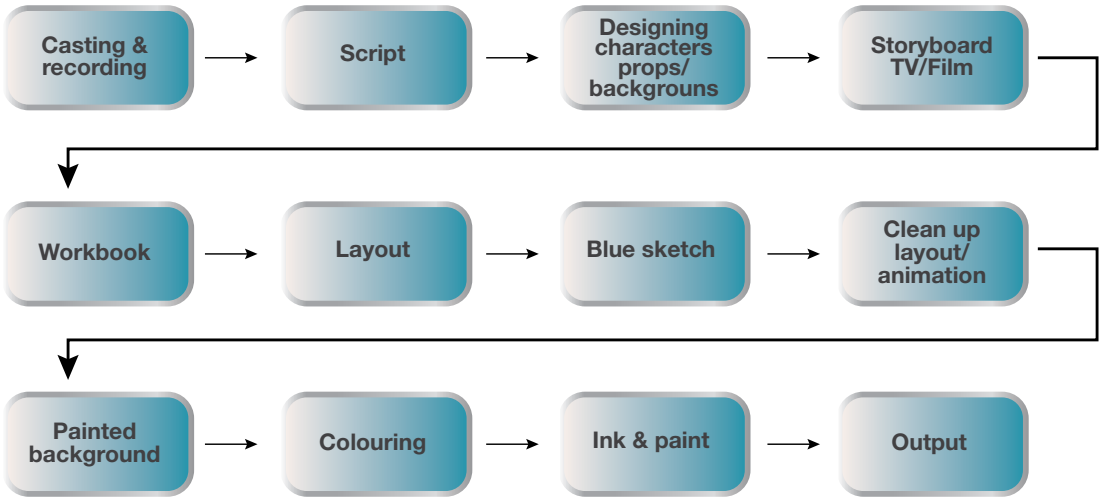
The contrasts that have emerged between traditional and modern production processes such as cel-animation and CGI have had an impact on labour force skills. First of all, crafts such as sculpting skills are important in the production of stop-motion animation,[4] which is still a popular genre in the animation industry, but this is no longer a major skill set. In the case of cel-animation, hand-drawing was the foremost skill, whereas now the basic skills needed by animators are artistic and creative skills and computer skills, including the use of graphic and video editing software such as Maya, Studio Max, Photoshop, Illustrator, Flash and modelling packages (Creative Skillset, 2015). The details of these core skills differ among the various types of animation such as 2D and 3D.

When the process changed from traditional cel-animation to 2D/CGI digital animation, jobs in traditional production disappeared. Animation studios no longer hire workers especially for “clean up” tasks, painting backgrounds, colouring by hand, or ink and paint for animation production (figure 2.2). In digital animation production, both 2D/3D, a new process has emerged which requires skills such as rigging,[5] rendering and composition (figure 2.3).

4 Stop-motion animation is a technique where animators capture the subtle movements of objects (mainly dolls with moveable frames, or clay figures) by each frame. The series of frames are combined and become a continuous sequence.

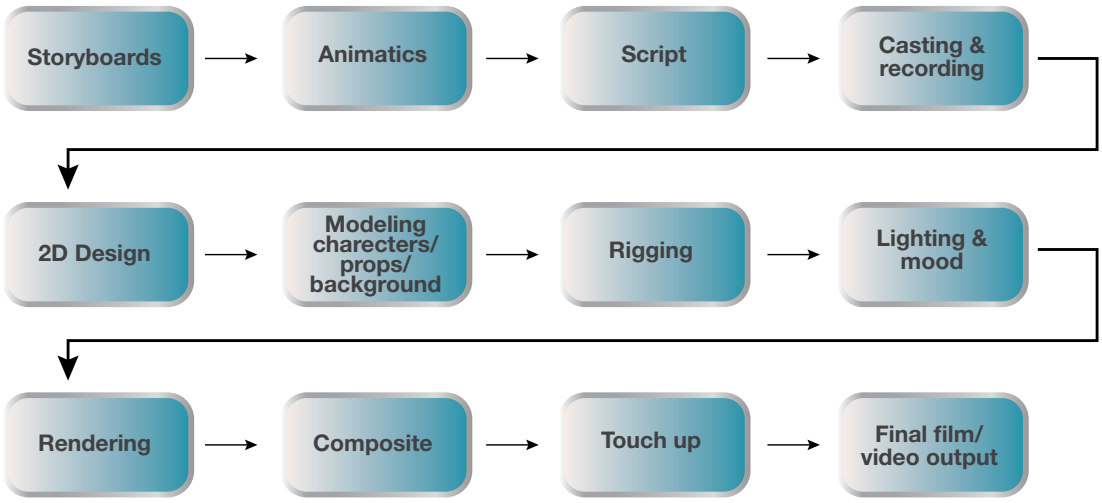
5 Rigging is a process in 3D animation modelling used to build a bone structure under the skin of characters. This is a foundation for the character’s movement and facial expression.

**Figure 2.2: The production process, 2D animation**




Source: Yoon, 2008.

**Figure 2.3: The production process, 3D animation**




Source: Yoon, 2008.

New production processes have created more jobs in the animation industry, but not all these jobs require high-skilled or experienced labour. Rendering and rigging take from a few months to more than a year (The Economist, 2005; Weishar, 2002). More recently, animation/VFX studios have tended to invest more funding in research and development (R&D) and planning than in the production stage (Visual Effects Society, 2013). Thus, the number of production-stage jobs has increased in offshore animation studios (Govil, 2008; Julka, 2013), while the numbers of "in-betweeners" who create images to bridge between important scenes has decreased in the traditional animation-producing countries such as Japan. On the other hand, pre-production, parts of production demanding high levels of technical skills, and post-production rarely leave their home countries unless special effects are needed (see figure 2 in section 2.1.1 above).

Countries which depend on outsourcing have utilized their competitive advantage such as low labour costs (Lent, 2001b; Yoon and Malecki, 2010). In addition, long years of subcontracting experience have improved the overall quality of animation production in a number of countries, such as Ireland and the Republic of Korea. Overall, however, these outsourced tasks in animation production are not high-value activities in the GSC. In-between and colouring tasks do not require high levels of education nor long-term training or sophisticated skills (Lent and Yu, 2001; Sito, 2006), but they are labour-intensive. High-value activities, especially those in the planning stages related to creating content and intellectual property, do not figure in these labour-intensive tasks and so do not guarantee high-value capture in the global supply chain. In addition, adaptations of the project-based work system and an increase in the number of freelancers do not directly result in social upgrading.

### 2.2.2 Working conditions

Developed countries with a long history of animation production, such as the United Kingdom and the United States, have experienced a downgrading of the working environment in animation. This varies according to company. Famous animation studios such as Dreamworks and Pixar are known for a relatively good working environment; for example, in 2012 Dreamworks was ranked among the 100 best companies to work in by the American business magazine Fortune, due to aspects as good facilities, benefits and free food. Overall, however, the animation industry offers low wages compared to other industries and low opportunities of access to training to develop long-term careers (Lee et al., 2014). Despite the relatively good working environment, most of the literature describing careers in the animation/VFX industry mentions long hours and low wages as the overall trend for future animators (Ashcraft, 2015; JAniCa, 2015; Okeda and Koike, 2011).

The major characteristics of jobs in the current animation/VFX industry can be summarized in the following six ways.

1. Jobs are low-paid and entail long hours of work (Okeda and Koike, 2011). In Japan, a world-renowned, animation production country, the average income of animators is JPY 1.1 million yen (US$11,900) per year, according to a recent survey (Ashcraft, 2015). In a recent survey of animators in the Republic of Korea, half of the total of 370 survey participants answered that their average annual income was between KRW 144 million (US$12,490) and 216 million (US$18,734) (Lee, Yoon and Lee, 2014), but this income level is lower than the national average of KRW 304 million (US$26,366). Moreover, 69.5 per cent of those surveyed said that they work more than 40 hours per week. In this situation, not many animators in the animation/VFX industry can make a living. Such harsh working conditions have pushed animators to leave the industry early in their careers (Okeda and Koike, 2011). In Japan, most animators work 11 hours per day, longer than average working hours, because they often have to work overtime and during weekends when project deadlines approach.

2. It follows that much of the labour in the animation/VFX industry is comprised of young people (Okeda and Koike, 2011). Salaries of entry-level employees are low; increases are based on years of work experience and promotion to higher positions such as a chief animation supervisor, but entry-level income is not enough to raise a family in many countries, including the Republic of Korea and Malaysia (Anime News Network, 2015). Thus, many animators in their early career live with their parents to save living expenses, or take a second job such as teaching. More than 90 per

cent of new Japanese animators leave the industry within the first two or three years (Japan Press Weekly, 2008). Their work experience varies by specialty, but an average animators' working experience is relatively short (Okeda and Koike, 2011).

3. Social security and other benefits such as health insurance vary by country and company. Many large animation studios, such as Dreamworks and Disney, provide health benefits and a retirement plan for their employees. However, in Japan, the majority of animators use national health insurance instead of cooperative-supported health insurance (Okeda and Koike, 2011). The major problem is the contract status: many animators in the industry are freelancers who are contracted to work for a particular project, and this affects pension and retirement plans. According to Okeda and Koike (2011), many freelancer animators in Japan do not join any kind of pension plan. This situation is no different from that in the United States; many American freelancers have to work more than 40 hours a week and are concerned about their health insurance as non-regular workers. Since the 2010 Affordable Care Act (Obamacare) has been introduced, many freelancers have chosen Affordable Care for their health insurance (Hirst, 2015). However, the income levels of some freelancers in the animation/VFX industry do not fit the requirements of the Affordable Care Act, so they cannot benefit from this programme.

4. Employees and freelancers in the industry need to work everywhere and anytime, due to a tight project schedules and the adoption of CGI. In addition, workers are expected to connect to the workplace using smartphones and the Internet (Gill, 2014). Such an intensive working environment is not a new trend in the industry. During the golden era of television animation films in Hollywood, employees needed permission to leave their desks to use the restroom (Cohen, 1997). Today, both employees and freelancers are expected to be always connected and ready for work; the risks driven by increasing flexibility of production are borne mainly by individual workers (Conor, Gill and Taylor, 2015; Perrons, 2000).

5. Informal hiring is common in the industry. Due to limited timeframes and tight budgets, the project team is usually comprised of people who are within an informal network (Eikhof and Warhurst, 2013). In practice, many people in the animation/VFX industry work continuously with people they already know. For example, graduating from the same school or recommendations from acquaintances are sometimes more important than an animator's portfolio (author's interview, 24 May 2012 with an animator working in the Republic of Korea) because project team leaders can save time if they use their existing networks.

6. The unpaid internship is a common pathway into the creative industries such as fashion, art and the animation/VFX industry (Shade and Jacobson, 2015). Students can learn about the industry while still receiving academic credit. If a faculty member at college creates an animated film, then his/her postgraduate students are usually expected to participate in the project (author's interview, 24 May 2012). In many cases, this type of participation is unpaid or underpaid, but students believe that they can acquire practical experience by working on real projects. However, this system allows only young students with family support to survive in the industry (Hesmondhalgh and Baker, 2015; Shade and Jacobson, 2015).

### 2.2.3 Project-based ecology of the animation/VFX industry

Much of the downgrading of the animation/VFX industry has been driven by the project-based production systems that are typical of the creative industries in both outsourcing and home countries. Project-based work requires intensive inputs of labour and other resources, often under a tight schedule (Eikhof and Warhurst, 2013; Grabher, 2002). Two types of employment are common in the animation/VFX industry: formal employees of animation studios and freelancers (self-employed persons). Freelancers now dominate the industry.

The previous in-house production system has changed to a more "network process" (Eikhof & Warhurst, 2013). Jobs in the animation/VFX industry are usually based on short-term contracts, irregular working schedules and low job security (Hesmondhalgh and Baker, 2010). Eikhof and Warhurst (2013) emphasize that different types of production governance for coordinating projects, such as partnerships, have become more important than hierarchy for working with freelancers and other independent studios.

The project-based production method has had several impacts on animation workers. First, the length of project varies by the length of film, types of skills and techniques required, quality of the work, and timeline of production. For example, a full-length film takes four to eight years, and each 30-minute episode of a TV series needs from two to three weeks (Raugust, 2004). When animation studios make a TV animation series they need over 100 workers for the project, but they do not need that number when they have fewer projects (authors' interview, 5 January 2014 with an animator working in the Republic of Korea). Various types of contracts with freelancers enable changes in the employment relationship based on project needs. Some animation studios treat freelancers either as part-time workers or as limited-time full-time workers for the duration of the project. These workers need to report to a studio and have fixed hours of work based on the type of contract they have signed (ibid.). The project-based ecology of the animation/VFX industry has thus resulted in unstable conditions of employment.

Meeting deadlines is the most important criterion for evaluation of workers in project-based industries (Garmann Johnsen, 2011). However, working schedules in the animation/VFX industry are always delayed and unpredictable and overtime work is common (Lee, Yoon and Lee, 2014). Such irregular schedules are often cited as a major reason why workers leave the industry (Okeda and Koike, 2011).

Project-based work also leads to a low level of job security. Since many contracts are based on limited-time projects, workers in the industry cannot predict where their next paycheck will come from. In some countries, the animation studios ask freelancers to sign an additional condition that they will work on only one project at a time (Okeda and Koike, 2011). But with no job security, finding the next project is the worker's responsibility. In general, freelancers must absorb all the risks that for formal employees of animation studios would be covered by insurance and social benefits.

Because freelancers must find their own jobs, many emphasize that informal and interpersonal relationships with people in the industry is essential. In many countries, entrepreneurship is highlighted in animation/VFX training programmes, and "know-who" type of knowledge is as important as "know-what" and "know-how" (Garmann Johnsen, 2011; Martin and Moodysson, 2011). This trend results in fewer work opportunities for newcomers, including women and workers who come from abroad, and who remain marginalized in the industry (Hesmondhalgh and Baker,

2015; ILO, 2014; Visual Effects Society, 2013). These unequal working conditions are found especially in small companies that specialize in temporary projects under subcontracting arrangements (Conor, Gill and Taylor, 2015).

### 2.2.4 Women in the animation/VFX industry

Unstable working patterns, in particular overtime work and delayed working schedules, tend to result in discouragement of female animators after the first two to three years. Only 20 per cent of employees in the animation/VFX industry are women, although they make up half of students in university programmes (Mayorga, 2015). Why do so many women leave the industry?

Due to the irregular working schedules of project-based work, child care rarely accompanies employment in the animation/VFX industry. In many cases, women in their 30s or 40s decide to leave the industry in order to raise their children. Since male workers remain longer than female workers (Conor, Gill and Taylor, 2015; Eikhof and Warhurst, 2013; Gill, 2014), managerial positions are full of male workers who generally do not understand the career barriers faced by female workers. In addition, the organization of animation/VFX studios is hierarchical (Morisawa, 2015). The male-dominant, upper-level positions are where most of the decisions on employment are made, which has resulted in gender segregation of the industry. Entry-level jobs are often filled by young women, but only a few of them are promoted to managerial positions (Hesmondhalgh and Baker, 2015). Only 10 per cent of directors in animation production of the United States are women (Mayorga, 2015).

### 2.2.5 Social dialogue

The term “social dialogue” refers to “all types of negotiation, consultation or simply exchange of information between representatives of governments, employers and workers, on issues of common interest relating to economic and social policy” (ILO, 2015). At the global, national and company levels, social dialogue is used to represent workers’ rights and improve conditions in workplaces (Eurofound, 2007; ILO, 2015). It includes consensus building, strengthening workers’ and employers’ organizations, levels of unionization, and issues of occupational health and safety.

While the movie industry in the United States has benefited from dialogue with trade unions, the impact on workers in the VFX industry has been limited. For example, the Animation Guild and the Writers’ Guild have protected workers in the field, but the American workers in the VFX industry have had no or relatively lower protection by unions, due to the relatively short existence of the industry compared to other film activities covered by the Writers’ Guild and the American Federation of Television and Radio Artists (SAG-AFTRA). Before CGI was widely used in production, Hollywood animation studios were more competitive and made more revenue than those operated by major Hollywood directors. But after the new CGI software became more commonly used in VFX production, tax incentives offered by foreign and local governments such as Taiwan (China) become the most important factor in attracting the VFX industry. This unbridled competition among latecomers in countries outside the United States resulted in oversupply, with many VFX projects competing with VFX studios in countries offering lower production costs; this has led to the closure of many Hollywood VFX specialized studios (KOCCA, 2014).

The bankruptcy of Rhythm and Hues, a US-based VFX/animation studio which had won three Academy Awards, prompted some social dialogue in the VFX sector (Curtin

and Vanderhoef, 2015). Rhythm and Hues was best known for the movie Life of Pi made by director Ang Lee in 2012. It was produced in India, Taiwan (China) and the United States due to tax reasons the need for a high level of VFX, which was used in every three out of four scenes. Life of Pi was a huge success at the box office in many countries and was nominated for several Academy Awards. However, Rhythm and Hues filed for bankruptcy shortly after the movie was released in 2013; over 200 studio workers lost their jobs. In protest, around 500 VFX workers demonstrated in front of the building where the Academic Awards ceremony was held (Curtin and Vanderhoef, 2015). Later, 34x118 Holdings LLC, affiliated with Prana Studio, an Indian animation/VFX studio in both Hollywood and Mumbai, India, purchased the Rhythm and Hues studio at auction (Giardina, 2013; Watt, 2014). Since the acquisition, Rhythm and Hues has set up production facilities in both Hollywood and Mumbai.

This case shows how workers in the animation/VFX industry have had to confront unstable working conditions and how the structure of the industry remains precarious. While many animation/VFX studios set up their offices in Hollywood or other important cities, their real production facilities are based in other countries which can provide low production costs and tax subsidies (Curtin and Vanderhoef, 2015). For example, Lucasfilms shut down their production facility in Vancouver, Canada, in 2013 but has kept its animation production division in Singapore. This issue has initiated the need for dialogue on workers' protection in VFX sectors. The Animation Guild, IATSE,[6] Local 839 is a union with a long history that has worked to define employment conditions such as hours and minimum wage; it also represents union members in disputes. The Visual Effects Society (VES) in the United States, and unions in other countries such as Australia, France and the United Kingdom, represent VFX workers (VES, 2015). However, workers in newly emergent countries have not yet developed sufficient social dialogue among agents in the industry.

For example, an animators' trade union was organized in the Republic of Korea in 1999, when the introduction of the temporary employment system and the adoption of the Act on the Protection, etc. of Fixed-Term and Part-Time Employees (Act No. 8074) in 1996 changed animators' status in an animation studio to a single-person business. As a result, the status of the majority of animators in the Republic of Korea was turned by law into that of freelancer. The trade union sprang up as a reaction to these changes. In 2004 it supported 12 animators occupied in hand-drawn colouring in winning severance pay from an animation studio that had fired them in order to switch the company's specialization to digital animation (Design Jungle, 2004). However, this union collapsed following the reorganization of Korean trade unions by industry after 2004 , which weakened them, and due to strong resistance from animation production companies. For example, some animation studios closed their business if animators attempted to join or create a trade union, but then founded a new production studio and hired non-trade union members (Moon, 2015).

### 2.2.6 Social protection

In the animation/VFX sector, job creation/destruction is often based on each project. Some companies hire animators for a specific projects, with the contract usually ending once the project is completed. In this context, animation/VFX studios prefer to work with freelancers, as do other cultural industries. Social protection for these workers varies by country. Many animation/VFX studios with significant numbers of

6 International Alliance of Theatrical Stage Employees, Moving Pictures Technicians, Artists and Allied Crafts of the United States, Its Territories and Canada.

employees, such as 401k in the United States, provide social protection such as health insurance and appropriate support for retirement savings.

Freelancers, however, are not eligible for the level of social protection schemes enjoyed by full-time employees in the same country. For example, in the Republic of Korea animation studios that hire more than five employees have to provide social security, including health insurance, unemployment insurance and retirement savings (Lee, Yoon and Lee, 2014). This is not the case for freelancers. A quarter of the 370 animators surveyed said that they wanted to change their career from the animation industry to others where there were better working conditions, such as the games or advertising industries. Thus, non-managerial jobs are usually filled by young recent college graduate animators (ibid).

# 3. Governance in the animation/VFX global supply chain

World markets in all sectors are increasingly integrated, and MNCs are increasingly fragmented. Yet global-scale production systems can still be controlled and coordinated or "governed". In the animation/VFX industry, governments and international organizations have worked together to create more jobs in developing countries for the economic upgrading of the industry. These efforts, however, aim to create better jobs for new immigrants or young people and women from lower-income groups.

## 3.1 Public governance

In many developing countries, animation is one of the industries that can create jobs for the local economy, and many national and local governments promote the local animation industry by providing incentives for the production of local animated films and establishing training programmes. Jobs in the animation industry are expected to improve employment rates among less-privileged young adults and women in developing countries. It is thus often public governance that has supported the economic upgrading of the animation/VFX industry as a good source of job creation. Public policy has highlighted the creation of more jobs and the provision of training programmes for private companies on media content from planning to post-production. In addition, public policy focuses on technology and skill development, and reducing production costs through various incentives to businesses, for example tax incentives (Parker, Cox and Thompson, 2015). However, this strategy, focusing on technological and skill development, does not necessarily bring sustainability to local industry through social dialogue. MNCs usually capture the high value-added part of GSCs, and newcomers such as small subcontracting studios in developing countries rarely upgrade their status within GSCs. There is therefore little room for building long-term sustainability in developing countries.

Some Asian countries such as the Republic of Korea, Malaysia and Singapore have supported the development of the digital and media content industry to gain competitiveness in the global market. The Malaysia Animation Creative Contents

Center (MAC3) is funded by the Multimedia Super Corridor (MSC)[7] initiative to promote the Malaysian animation industry. The aim of this project is to make Malaysia a multimedia centre in Asia. The MAC3 provides high-end facilities and production equipment to Malaysian animation studios and VFX production companies. Specialized studio and machinery for digitization and audio recording, tasks that require high levels of capital investment, are provided by the MAC3. In addition, MAC3 has supported the development of local animation production through providing production funding and supporting start-up animation studios (MAC3, 2015). This kind of support is the most common industry-promoting strategy through public institutions, and has resulted in cases of upgrading of the industry within GSCs.

## 3.2 Private governance

Industry associations also play a role in governance of the animation/VFX industry. Private governance focuses on upgrading skills or educating members on their rights, and providing benefits such as lower rates of health insurance and retirement funding to freelancers who are members of the associations or of small business (VES, 2015). In particular, programmes to upgrade skills target both newly graduated animators and workers with experience.

The Bridge programme in Ireland is an example of private governance in the animation industry. It is a training and networking programme by Animation Skillnet, an institution funded by member companies such as Treehouse Republic and Windmill, and Screen Training Ireland. Any recent graduate or unemployed graduate can take courses and workshops from The Bridge programme. Its main purpose is to fill the gaps between formal education programmes and the needs of the industry by offering new courses and building networks among professionals. The programme emphasizes upgrading skills and networking for animators (Irish Film Board, 2014).

## 3.3 Social governance

In general, the two major aims of social governance initiatives in the animation/VFX industry are to create more local jobs and to improve working conditions of animators in the industry. Such programs include other private/ non-profit partners in many cases.

### 3.3.1 Anizooms

ANK,[8] founded in 2004, is a non-profit government organization based in Delhi that has created and runs a programme called Anizooms for women and urban youth in low-income communities. It has partnered with a foundation, the National Association of Software and Services Companies (NASSCOM).[9] The promramme teaches IT skills and CGI, including courses such as 2D graphics and 3D Maya with English communication skills for enhancing job opportunities in the animation and VFX industry.

7 MSC is a government-designed special economic zone in Malaysia in place since 1996 and specializing in multi-media to provide a business-friendly environment to both local and foreign enterprises (Hang, 2010).

8 A Hindi word, translated in English as ‘digit’.

9 NASSCOM, a non-profit organization, is a trade association of Indian information technology business process outsourcing industry that is founded in 1988.

This type of social governance programme from an NGO empowers underprivileged women and youth in developing countries.

### 3.3.2 JAniCA

Before the creation of an official trade union among Japanese animators, the Toei animation company's labour union negotiated with the company to establish a basic salary system including overtime payments and upgrading employees' status from individual contractors to regular employees (Japan Press Weekly, 2008). This is an exceptional case in the Japanese animation industry, but it could become the industry standard. Based on this movement, the Japanese Animation Creators Association (JAniCA) was organized in 2007 to improve the working environment of animators and to promote their rights. JAniCa received funding from the Japanese Government Agency for Cultural Affairs to provide an educational training programme for young animators. The programme, Young Animation Training Project, chose four animation studios, Answer Studio, Shirogumi, Telecom Animation Film, and Production I.G. and supported the production of 24-minute original short films (Anime News Network, 2011). In addition, JAniCA recently completed a report on working conditions in the Japanese animation industry. Although JAniCA's main aim is to keep more animation jobs in Japan, its other ongoing projects – for example, a survey of workers in the animation industry – have brought the poor working conditions in animation production to public attention. Despite its reputation of economic upgrading in global animation production, the Japanese animation production system has not resulted in significant social upgrading.

### 3.3.3 Visual Effects Society

The Visual Effects Society (VES) is a professional, honorary society of VFX that includes regional sections in Canada (Montreal, Toronto and Vancouver), New Zealand, the United Kingdom (London) and the United States (Los Angeles, New York and the San Francisco Bay area). The VES has over 3,000 members in 32 countries. It is open to VFX workers in various sectors, such as film, TV, commercials and animation, and provides educational/training programmes for updating technical skills, career/business development forums, and social/networking events for its members. As many workers in VFX are freelancers, the VES provides specific services, especially contract advice and checklists to members (VES, 2015). For example, it provides sample service agreements for independent contractors on the VES website, including details such as number of weekly working hours, and indicating the terms of agreement. The website also includes information on jobs, relocation to different countries such as China, and legal advice from professional law firms.

## 3.4 Joint governance and other forms of partnership

### 3.4.1 The World Bank in partnership with the Governments of Canada and Jamaica

Like India, the Republic of Korea and the Philippines, Jamaica has become an important global outsourcing hub. Jamaican animation studios have coproduced animated films with foreign countries, such as France. However, its economy has not been stable enough to invest in infrastructure for the media industry or to initiate formal education programmes for young adults who are eager to work in the industry.

The World Bank and the Government of Jamaica set up a joint two-year training programme in 2014 for young adults, called Animate Jamaica. The major agents of this programme are the Jamaican and Canadian Governments, international organizations, and private companies –Reel Rock GSW in Jamaica and Toonboom in Canada. The major purposes of this initiative are to develop the local animation industry and to help young Jamaicans obtain better paid jobs. Jamaican animators expect that this programme can provide more trained and skilled workers capable of creating more original animated films for the Jamaican content industry. The programme also has provided an incubator programme to assist the growth of local animation business.

### 3.4.2 UNESCO animation projects in Africa and Latin America

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) has supported the growth of animation production in developing countries. The Africa Animated! project has provided a series of regional training programmes and workshops to people from 15 different countries in Africa (UNESCO, 2004). In Kenya, the project established the foundation of the animation industry and provided more training opportunities to young adults. A number of short animated films were developed during the programme. Although the growth of the animation industry in Africa is still at an early stage, the project aimed at empowering young adults to develop regional animation production, and creating better jobs in the local area through formal education (Callus, 2008).

UNESCO has initiated a similar project, “Animatión Andina (Andean Animation)” in Latin America under its International Programme for the Development of Communication (IPDC). The major aims of the project are to promote the media industry in the Andean region and to produce short animated films influenced by the Andean cultural heritage to accelerate intercultural communication among countries in the region. This project plans to train animators from four countries – Bolivia, Colombia, Ecuador and Peru – and includes a five-week training course for animators from indigenous communities, including women (UNESCO, 2015).

### 3.4.3 Next Gen Skills Academy

Partnership between governments and private companies is a common strategy to upgrade the industry. From 2012, the UK Government plans to invest £6.5 million to support a training programme called the Next Gen Skills Academy. Diverse companies in the VFX, animation and gaming industries have supported and participated in the programme to train young people who want to work in the digital sector. Companies in the industries collaborate, and the training programme is run by colleges in the United Kingdom which provide paid apprenticeships for students who join the programme (Boxer, 2014).

# 4. Conclusions

As this paper has tried to show, the globalization of the animation/VFX industry has brought economic upgrading to developing countries and created more jobs in the sector, but not necessarily decent work. The fundamental goal of globalized animation production has been seeking lower production costs. Since approximately 70 per cent of the entire cost derives from the production stage, costs have been reduced by shifting from permanent in-house systems to project-based production. This has led to non-standard workers such as short-term contract workers and freelancers becoming common in the industry. Freelancers are often considered to be highly skilled workers who do not want to be affiliated with a particular company, but freelancers in the animation/VFX industry are forced to be self-employed with short-term contracts due to the unique production system. In addition, the project-based production system has maintained a hierarchical organizational structure among workers. Thus, gender issues such as female workers' career discontinuity due to child care and fewer opportunities for immigrant workers, have become problematic in the industry.

Attempts to reach consensus for any kind of social dialogue, including collective bargaining, face challenges in the animation/VFX industry because work environments and contracts differ widely. However, some countries that have a long history of trade union activities, such as the Animators' Guild in the United States or trade unions in the media and entertainment industries, have been able to secure some protection of animators' rights and provide systematic services to their members.

Thus jobs in the animation/VFX industry have been transferred to developing countries, but these jobs do not guarantee social upgrading in these countries. The increase of jobs may be temporary and not appropriate for strengthening the industry in the long term. Even though some countries have experience in animation production over many years, social upgrading of workers in the industry has not reached a level that can be considered decent work. In many cases, startup animation studios learned from previous companies that sought to achieve labour flexibility by replacing formal employees with short-term contract workers and freelancers, and they have continued to follow old, undesirable management styles.

Many Asian countries have used the creative industries as sources of job creation and transformation from traditional, manufacturing-based OEM to high-tech sectors, particularly information and communications. Governments have made efforts to attract more coproduction with foreign studios and have provided various policy measures to support the training of young people for work in the industry, but these governments have not yet fully considered the need to protect these young workers who hope to pursue careers in the industry.

While the project-based production system has become the industry standard for production cost savings, working in the industry has become more precarious in many ways. Even though workers may have contracts for their work with several studios, means of social protection such as timely paychecks, insurance and social security are not fully guaranteed. Overtime work is sometimes not paid. Many animators in their early careers find it difficult to work in the industry for a long period of time. As explained earlier, many then leave to pursue careers in other industries such as advertising.

The recent cultural policy in developed countries such as Canada has reduced funding to local animation production, so that more animation studios have outsourced low

value-added tasks to offshore subcontractors. Newly emerging countries have focused on the creation of jobs in the animation/VFX industry, but workers' social security and rights at work have been neglected. Governments in newcomer countries still need to protect vulnerable workers in the animation/VFX industry rather than focusing only on exporting products and increasing GDP. While skills development has been given priority by government authorities, social protection should be further strengthened. With the long history of offshoring of low-paid jobs, the pursuit of low production costs is not over; the trend will continue.

Since the majority of workers in the industry are freelancers or self-employed, unionization is not easy. Thus, the public sector including state and local governments should focus on establishing a standardized guide for protecting non-standard workers in the industry. For example, project-based contracts between workers and employers are not easily changed, so detailed guidelines from governments for both workers and employers would be beneficial. The role of trade unions should also be widely promoted to workers in the industry to improve the work environment and social security. For example, the recent successes of the trade union JAniCA in Japan should be recognized. The major purpose of JAniCA is to raise Japanese animators' salaries and social benefits to the same level as the average Japanese worker through social dialogue among various agents in the industry. However, the state and local governments should provide appropriate institutional support and ensure that the necessary preconditions exist for social dialogue.

The prospect of decent work in the animation/VFX global supply chain is therefore tightly linked with trends in the rest of the digital media industry. While outsourcing has allowed developing countries to create new jobs that develop 21st-century skills in graphics and computer technology, these jobs eventually plateau into low-paid, labour-intensive tasks. Moreover, the project-based freelance economy that pervades the industry makes long-term decent work prospects dim.

Some remedies to this issue could include the development of high-skilled production and management jobs which can draw on burgeoning animation talent to create indigenous productions of full animation products. Countries such as Jamaica and the Philippines could follow in the footsteps of Ireland and Japan to create their own animation products. This might require certain trade measures to encourage native industries, as well as cultural development and promotion to allow unique cultural approaches to animation to prosper.

Global social dialogue, and perhaps global collective agreements could also be envisioned to provide basic protection to workers in the industry. Social and public governance in both outsourcing countries and outsourced countries will be critical in this regard. Finally, the development of social security regimes which provide a basic social protection floor for all workers, including those in the freelance economy, may be a step forward in encouraging more young people to develop animation/VFX skills and engage in entrepreneurial activities to develop the sector.

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# Promoting Decent Work in Global Supply Chains: The Electronics Industry

*Gale Raj-Reichert*

**Study 4**

# Study 4

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## Figures



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# Executive summary

The global electronics industry is one of the largest industrial sectors in the world economy. It makes up close to one-quarter of globally traded manufactured products and is estimated to generate more revenue and employ more workers than any other manufacturing sector. Around 18 million workers are estimated to be employed in the industry globally. There is a significant use of temporary and other non-standard forms of employment, including a high use of foreign workers in some parts of the world.

A key feature of the industry is its vast and complex global supply chains (GSCs). Most outsourced manufacturing activities are located in Asia, with China the world's largest manufacturer and exporter of electronic products. There are changes in the geographies of consumption and production of electronic goods as emerging economies become a major growth opportunity for both incumbent and new brands.

Suppliers in the electronics industry GSC often face a conflict between labour standards and a just-in-time production model based on short and fluctuating production cycles which can lead to labour violations. It is often suppliers in the lower tiers of the GSC which do not comply with or face enforcement of standards and regulations. Common labour violations and poor working conditions include low wages, non-standard forms of employment, forced labour, excessive working hours, health and safety risks, and low levels of trade unions. In Malaysia a report commissioned and funded by the United States Department of Labor found a high incidence of forced labour amongst foreign workers in its electronics industry. In China there is wide-spread and exploitative use of low-paid student interns and excessive overtime in the industry.

The Decent Work Agenda of the International Labour Organization (ILO) sets out that economic upgrading of firms should coincide with social upgrading that leads to improvements in worker conditions and rights. While economic upgrading is the process by which firms move into production of higher value-added products resulting in higher prices, revenue and/or profit, social upgrading leads to secure and better employment, social protection, rights at work, living wages and benefits, and the right to freedom of association, collective bargaining and social dialogue. Evidence so far suggests that economic upgrading can but does not automatically or inevitably lead to social upgrading. Further, it is possible that economic upgrading leads to social downgrading.

The economic upgrading that has occurred in Mexico and Eastern Europe in the electronics industry has taken place amongst multinational corporations and not local firms. Social upgrading is often limited to workers in already higher-skilled management and engineering positions. In addition, the benefits of social upgrading are not universally experienced by all categories of workers: temporary workers, for example, are less likely to receive training and job skills development.

Government policies can also limit social upgrading, for example by restricting skill development opportunities to certain types of workers, as seen in some areas of China; or by stalling the economic upgrading process through over-reliance on low-waged foreign workers, as has been the case in Malaysia. On the other hand, government policies can foster economic and social upgrading, for example through support for research and development, skills development, acquisitions and moving out of low-waged segments of the GSC, as in Singapore.

Research shows that suppliers in GSCs are more likely to comply with labour standards when located in countries that adhere to ILO standards, have strong labour laws and high levels of press freedom, and whose buyers originate from countries with wealthy and socially conscious consumers. This points to the need for multiple governance mechanisms – public, private and public-private measures simultaneously – to ensure decent work in the electronics industry GSC. In terms of public governance, several countries have government regulations on GSCs focused on conflict minerals and forced labour. Other regulations, such as a European Union product standard, have been shown to travel down GSCs to regulate small second tier suppliers. Private industry codes and standards, while generally weak, have changed in recent years to accord with government regulations.

At the international level, negotiations over a binding treaty on business and human rights began in 2015. Social governance mechanisms in place include global framework agreements (GFAs) and campaigns by non-governmental organization (NGO) for socially responsible public procurement of electronic goods in Europe, and social audits. A challenge to governance for decent work in the electronics industry GSC, however, is production in emerging markets where there are fewer pressures, drivers or incentives to improve labour standards.

# Abbreviations and acronyms

| | |
|---|---|
| **ASEAN** | Association of Southeast Asian Nations |
| **CNY** | China Yuan Renminbi (currency) |
| **CSR** | Corporate Social Responsibility |
| **CTSCA** | California Transparency in Supply Chains Act |
| **DRC** | Democratic Republic of Congo |
| **EICC** | Electronics Industry Citizenship Coalition |
| **EO** | Executive Order (United States) |
| **FAR** | Federal Acquisitions Regulation (United States) |
| **GEN** | Good Electronics Network |
| **GFA** | Global Framework Agreement |
| **GPN** | Global Production Network |
| **GSC** | Global Supply Chain |
| **GVC** | Global Value Chain |
| **HP** | Hewlett Packard |
| **ILO** | International Labour Office/Organization |
| **ISO** | International Standards Organization |
| **JETRO** | Japan External Trade Organization |
| **MNC** | Multinational Corporation |
| **MoU** | Memorandum of Understanding |
| **NGO** | Non-Governmental Organization |
| **NTUC** | National Trades Union Congress (Singapore) |
| **OECD** | Organisation for Economic Co-operation and Development |
| **OHSAS** | Occupational Health and Safety Group |
| **R&D** | Research and Development |
| **ROHS** | Restriction of Hazardous Substances |
| **SGD** | Singapore Dollar |
| **SOMO** | Stichting Onderzoek Multimationale Ondernemingen (Centre for Research on Multinational Corporations) |
| **UNGP** | UN Guiding Principles on Business and Human Rights |

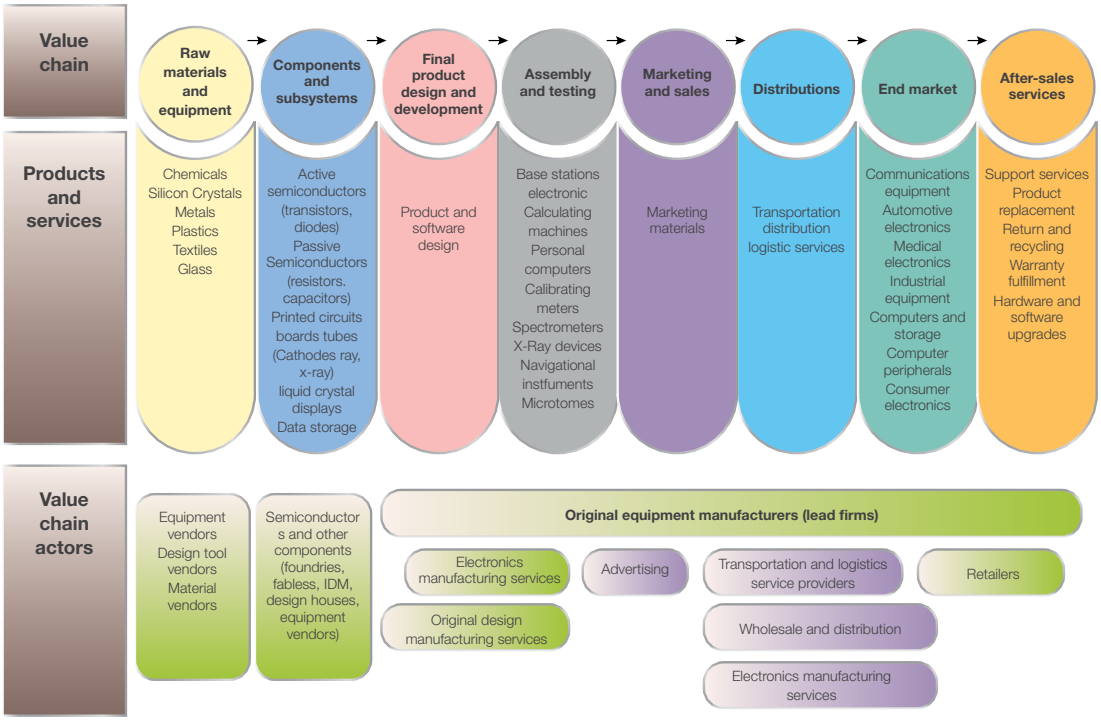
# 1. Introduction

## 1.1 Overview of the global electronics industry

The global electronics industry is one of the largest industrial sectors in the world economy. It makes up almost one-quarter of all globally traded manufactured products (Plank and Staritz, 2013) and is projected to grow at an annual rate of 7 per cent between 2013 and 2015 (Verite, 2015). It generates more revenue and employs more workers than any other manufacturing sector (Sturgeon and Kawakami, 2011). Exact figures on the total number of workers in the global industry are difficult to come by: in 2004, the ILO estimated over 18 million workers worldwide (ILO, 2007), while in 2010, a similar number was estimated in a study conducted for the ILO Better Work Programme (Better Work, 2010). But it is difficult to know whether these figures include workers on non-standard forms of employment. According to computations based on the 2014 World Bank Enterprise Survey of electronics firms in developing countries, 36 per cent reported using temporary workers, defined in the survey as "temporary or seasonal employees, defined as all paid short-term (i.e. for less than a fiscal year) employees with no guarantee of renewal of employment contract" (Aleksynska and Berg, 2015, p. 9). This does not capture temporary workers whose contracts are renewed continually and are longer than one year, an arrangement which in countries such as Hungary, Malaysia and Mexico is widespread in electronics factories (Kaur, 2008; Salame, 2011; CEREAL, 2011; Pal, 2013).

One of the key features of the industry is its widespread use of outsourcing and subcontracting. This began in the 1980s as multinational corporations (MNCs) restructured their business strategies to rid themselves of low value-added manufacturing in their home countries through outsourcing in order to focus on the "core competencies" of research and development (R&D), product design, brand management and marketing (Milberg, 2004; van Liemt, 2007). These changes created vast global supply chains (GSCs) where outsourced suppliers provided the flexibility to meet changing production needs of the firms placing the orders (Berger et al., 1999; Sturgeon, 2002) (see figure 1 for a visual example of a global supply chain). Today, the electronics industry is considered to have the most extensive and dispersed global sourcing of all manufacturing sectors (Sturgeon and Kawakami, 2011).

**Figure 1.1: Representation of an electronics industry global value chain**




Source: Sturgeon et al., 2013.

Most outsourced manufacturing activities are located in Asia. According to Matsuzaki (2015), 62 per cent of LED and LCD televisions, 70 per cent of semiconductors, 76 per cent of car navigation systems, 86 per cent of mobile and smart phones, and 100 per cent of digital cameras are manufactured in the Asia region. Apple, for example, apart from manufacturing Macs in the United States, outsources all its manufacturing to firms in Asia (SEC 10-K, 2014).

China has been the world's largest manufacturer and exporter of electronic products since 2004 (Verite, 2015). In 2009 it exported 61 per cent of all computers and 85 per cent of all DVD players in the world market (see table 1.1). It is also the world's largest mobile phone producer. In recent years, the Taiwanese electronics contract manufacturer, Foxconn, has become China's leading exporter and largest private employer (Barrientos, Gereffi and Rossi, 2011; Chan, Pun and Selden, 2013). China became the powerhouse of electronics manufacturing when it developed special economic zones in the late 1970s and further with the opening up of its economy to international trade and foreign investment in the 2000s. However, with rising wages in China, other lower-cost locations in Asia such as India, Indonesia and Viet Nam are projected to become major production locations in the future In 2014, Samsung built the world's largest smartphone factory in Viet Nam with projected employment of 100,000 workers by July 2015. Foxconn plans to open a US$1 billion manufacturing facility in Indonesia that will employ 100,000 workers (Matsuzaki, 2015). Foxconn has already begun manufacturing in India and plans to build up to 12 factories in the country and create one million jobs (Aulakh, 2015).

**Table 1.1: Chinese exports of electronic goods, world market share by product, 2008 and 2009**

| Product | 2008 | 2009 |
|---|---|---|
| Computers | 47% (147 million) | 60.9% (182 million) |
| Mobile phones | 44.7% (560 million) | 49.9% (69 million) |
| DVD players | 80% (150 million) | 85% |
| Televisions | 43.9% (90 million) | 48.3% (99 million) |

Source: APCO Worldwide, 2010.

With few barriers to international trade and protectionist government policies, the electronics industry faces intense competition (Sturgeon and Kawakami, 2011). For some products such as personal computers, price competition is fierce. From 1995 to 2010, prices for electronic goods declined by 92.3 per cent and continue to decline at an annual rate of 16 per cent (Verite, 2015). The industry is also characterized by rising complexity. New products are introduced frequently, product lifecycles are increasingly shortened, and rapid technological innovations are taking place in every product segment of the industry; for example, 900 more varieties of mobile phone were introduced in 2009 than in 2000 (Malik, Niemeyer and Ruwadi, 2011). In order to remain competitive, branded firms continually advance technologically to provide new products and increasingly services in the marketplace. New products such as smartphones, tablet computers, servers and data storage systems involve more technological innovation and hence more value-added for branded firms (see table 1.2 for a list of main electronic products).

**Table 1.2: Main electronic products and their branded firms**

| Main market segments | Product examples | Lead firm examples |
|---|---|---|
| 1 Computers | Enterprise computing systems, PCs (desktop, notebook, netbook), embedded computers | IBM, Fujitsu, Siemens, Hewlett-Packard, Dell, Apple, Acer, Lenovo |
| 2 Computer peripherals and other office equipment | Printers, fax machines, copiers, scanners | Hewlett-Packard, Xerox, Epson, Kodak, Cannon, Lexmark, Acer, Fujitsu, Sharp |
| 3 Consumer electronics | Game consoles, television, home audio and video, portable audio and video, mobile phone handsets, musical equipment, toys | Toshiba, NEC, Vizio, Sony, Sharp, Apple, Nintendo, Microsoft, Samsung, LG, Matsushita, Hitachi, HTC, Philips |
| 4 Server and storage devices | Portable, internal, external, backup systems, storage services | Toshiba, Western Digital, EMC, NetApp, Hewlett-Packard, Hitachi, Seagate, Maxtor, LeCie, Quantum |

| | | | |
|---|---|---|---|
| 5 | Networking | Public telecommunications, private communications networks, internet, mobile phone infrastructure | Alcatel, Nortel, Cisco, Motorola, Juniper, Huawei, Ericsson, Nokia, Tellabs |
| 6 | Automotive electronics | Entertainment, communication, vehicle control (braking, acceleration, traction, suspension), vehicle navigation | TomTom, Garmin, Clarion, Toyota, General Motors, Renault, Bosch, Siemens |
| 7 | Medical electronics | Consumer medical, diagnostics and testing, imaging, telemedicine, meters and monitoring, implants, fitness | General Electric, Philips, Medtronic, Varian |
| 8 | Industrial electronics | Security and surveillance, factory automation, building automation, military systems, aircraft, aerospace, banking and ATM, transportation | Diebold, Siemens, Rockwell, Philips, Omron, Dover |
| 9 | Military and aerospace electronics | Ground combat systems, aircraft, sea-based systems, eavesdropping and surveillance, satellites, missile guidance and intercept | L-3 Communications, Lockheed Martin, Boeing, BAE Systems, Northrop Grumman, General Dynamics, EADS, Finmeccanica, United Technologies |

Source: Sturgeon and Kawakami, 2011.

There are also changes in the geographies of consumption and production of electronic goods. New consumer markets are rising in emerging economies in East Asia, Latin America and South America. These emerging markets, which make up the world's largest population and consumer market, are a major growth opportunity for both incumbent and new brands. The overall share of global demand by consumers in emerging markets was 40 per cent in 2008 and is predicted to rise to 66 per cent by 2025 (George, Ramaswamy and Rassey, 2014). China is a prime example of this tremendous growth in consumption: in 2010, Chinese consumers purchased 19 per cent of all personal computers, 18 per cent of all LCD televisions, and 14 per cent of all mobile phones sold in the world, and in 2011 overtook the United States to become the largest consumer of personal computers.

New markets have led to new brands from emerging economies. Brands from China and Taiwan (China) are able to compete against global giants such as Apple in domestic markets, with high-quality but lower-priced products (see table 1.3). Brands from China include: Lenovo, the largest seller of personal computers (Gartner, 2015); Haier, the world's largest and fastest growing home appliances manufacturer (Crainer, 2015); Xiaomi, the third largest smartphone manufacturer in the world and the top seller of smartphones in China (Jourdan, 2015); and Huawei, the second highest seller of smartphones in China in 2015. Apple had the third highest sales in smartphones in China in 2015 (iCrossChina, 2015). Brands from Taiwan (China) include Acer and ASUSTek, which are the top two sellers of personal computers in the

country (TechNews, 2015), and BenQ Materials, the world's second largest projector manufacturer (The China Post, 2015).

**Table 1.3: Rising electronics brands from China, 2014 and 2015**

| Brand | Country of origin | Revenue (US$ millions) | Sales |
|---|---|---|---|
| Lenovo | Mainland China | 46 300 (2015)[1] | 18.8% share of all personal computers in the first half of 2015 |
| Haier | Mainland China | 32 800 (2014) | 10% global share of home appliances in 2014 |
| Xiaomi[2] | Mainland China | 11 970 (2014) | Around 61 million smartphones worldwide in 2014 |
| Huawei | Mainland China | 46 500 (2014)[3] | 16% share of smartphones in China in early 2015 |
| ASUSTek | Taiwan | 14 700 (2014)[4] | 50% share of PCs in Taiwan |
| Acer | Taiwan | 10 480 (2014)[5] | World's 4th largest personal computer manufacturer[6] |
| BenQ | Taiwan | 551 (2014)[7] | 12.9% share of projectors globally |

Sources: Lenovo, 2015.
[2] http://www.reuters.com/article/2015/01/04/us-xiaomi-sales-idUSKBN0KD0CQ20150104.
[3] http://pr.huawei.com/en/news/hw-420605-annualreport.htm#.Vidu9vkrLcs.
[4] http://www.bloomberg.com/research/stocks/financials/financials.asp?ticker=2357:TT&dataset=incomeStatement&period=A&currency=US%20Dollar.
[5] http://www.bloomberg.com/research/stocks/financials/financials.asp?ticker=2353:TT&dataset=incomeStatement&period=A&currency=US%20Dollar.
[6] http://www.binarytribune.com/2014/05/08/acer-inc-share-price-up-ends-losing-streak-after-minor-first-quarter-profit./
[7] http://www.benqmaterials.com/english/05_about/about_detail.aspx?pid=1.

## 1.2 Firms in the global supply chain

The electronics industry GSC is comprised of three groups of firms: branded firms, contract manufacturers and component suppliers. This section provides a brief discussion of each group of firms and their roles in GSCs.

### 1.2.1 Branded firms

The majority of global brands originate from developed countries, with a few exceptions (see table 1.4). There is a concentration of branded firms in different product segments in the industry, as shown above in table 1.2). For mobile phones, Apple and Samsung account for almost all industry profits (Lee, Gereffi and Nathan, 2013). In personal computers, sales are dominated by Lenovo, Dell, Apple, and Hewlett-Packard (HP). Branded firms compete intensely through R&D: Apple, for example, almost doubled its R&D expenditure from 2012 at US$3.4 billion to 2014 at US$6 billion (SEC 10-K, 2014). In comparison, Dell's R&D averaged US$0.9 billion from 2011 to 2013 (ibid.). The fast rate of technological innovation is shown by

patent ownership. IBM holds the most patents in the industry with 81,500 patents registered in the United States in 2014 (Maney, 2015). Apple, which is considered the "world's most valuable brand" and is the world's highest-value company with a market capitalization worth US$710.7 billion (BloombergBusiness, 2015) had 15,500 patents in 2012 (McGrath, 2012).

**Table 1.4: Top electronics branded firms, by revenue, 2014 (US$ millions)**

| Company | Revenue | Fortune Global 500 rank | Number of employees | Country of origin |
|---|---|---|---|---|
| Samsung Electronics | 195 880 | 13 | 326 000 | Republic of Korea |
| Apple | 170 910 | 15 | 80 300 | United States |
| Foxconn | 133 162 | 32 | 1 290 000 | Taiwan (China) |
| Hewlett-Packard | 112 298 | 50 | 317 500 | United States |
| IBM | 99 751 | 71 | 433 362 | United States |
| Hitachi | 95 988 | 78 | 326 240 | Japan |
| Microsoft | 77 849 | 104 | 99 000 | United States |
| Sony | 77 532 | 105 | 146 300 | Japan |
| Panasonic | 77 226 | 106 | 327 512 | Japan |
| Toshiba | 64 908 | 145 | 168 733 | Japan |
| Dell | 56 940 | _ | 108 800 | United States |
| LG Electronics | 53 118 | 194 | 38 718 | Republic of Korea |
| Intel | 55 900 | 195 | 104 700 | United States |

Sources: Fortune 500, 2014; Statista.

Branded firms subcontract and outsource a considerable amount of manufacturing to contract manufacturers and use a range of suppliers for parts and components. They organize and govern GSCs by determining what is produced, where, which suppliers are able to participate, and under what conditions such as price, quality and delivery requirements (Gereffi, Humphrey and Sturgeon, 2005).

Apple began outsourcing almost all its manufacturing, assembly and packaging from the early 1980s onwards (Chan, Pun and Selden, 2013). Today it commands a large GSC with 785 suppliers located in 31 countries (Comparecamp.com, 2014).[1] The top three locations of Apple suppliers are China (349 suppliers), Japan (139) and the United States (60) (ibid.). It is also heavily reliant on Foxconn, which in the past was the exclusive manufacturer of the iPhone and iPad.

1 A list of Apple's top 200 suppliers in 2014 can be viewed at https://www.apple.com/euro/supplier-responsibility/b/generic/pdf/Apple_Supplier_List_2015.pdf.

HP is one of the largest electronics firms and a major global producer of personal computers and printers. It also produces servers, storage and networking systems and software. In late 2015, HP has split into two companies. HP will remain a company that provides products to non-business consumers, and HP Enterprise will serve business customers (Hewlett-Packard, 2015a). Unlike Apple, HP has its own manufacturing factories; in 2011, it publicly listed 67 major operations (Hewlett-Packard, 2012). It has also consolidated its suppliers in recent years: in 2006 it had over 700 direct suppliers and 400 contract manufacturing sites (Global Logistics & Supply Chain Strategies, 2006), while in 2014 it had 26 final assembly manufacturers at 61 assembly sites and 38 commodity and component suppliers, representing over 95 per cent of procurement (Hewlett-Packard, 2014). Its suppliers are located in 15 countries and employ 102,000 workers. The top three final assembly supplier locations are China (29), Malaysia (5), and the Czech Republic (5) (Hewlett Packard, 2015b).

Branded firms are normally held publicly responsible for labour violations in their GSCs. They have responded by increasing activities around supply chain governance. HP has been at the forefront of this development. In 2004, after a damning report of poor working conditions in outsourced factories in Mexico by the Catholic Agency for Overseas Development, HP led the establishment of an industry-wide group – the Electronics Industry Citizenship Coalition (EICC). The group adopted a code of conduct over labour, environmental and human rights conditions, called the Electronics Industry Code of Conduct (hereafter EICC Code of Conduct), which was modelled after HP's own supplier code of conduct (Raj-Reichert, 2011). In 2014, HP became the first US electronics company to ban the use of recruitment agencies when hiring foreign workers and forbid recruitment fees for all workers in its GSCs (Biron, 2014). Apple in 2010 faced one of the most egregious incidents over labour conditions when 14 workers at a Foxconn factory in China committed suicide (Chakrabortty, 2013). Since then, Apple has probably expended the most resources on supplier governance in the industry, according to a personal interview by the present author with a corporate social responsibility manager at a brand firm which is an EICC member). For example, Appel is the only company in the electronics industry that joined the Fair Labor Association and paid US$250,000 in membership dues on joining in 2010 (Anner, 2012).

### 1.2.2 Contract manufacturers

A significant amount of product manufacturing is carried out by a small group of firms referred to as "contract manufacturers". Contract manufacturers are highly capable in manufacturing, assembly and testing of parts and final products, and supply chain management; they also increasingly provide design services for customer firms (Azmeh, Raj-Reichert and Nadvi, forthcoming; Gereffi, 2004). According to the European Commission (2012), branded firms outsourced up to 80 per cent of their production to five contract manufacturers: Sanmina-SCI, Celestica, Jabil Circuit, Flextronics and Foxconn (see table 1.5). Foxconn is the largest contract manufacturer and has many international branded firms as its customers, with Apple's products estimated to make up about half of Foxconn's revenues (Clover, 2014).

**Table 1.5: Top contract manufacturers, 2013/14**

| Contract manufacturer | Home country | Revenue (US$ millions, 2013) | Employees |
|---|---|---|---|
| Foxconn | Taiwan | 131 533.1 | 1 290 000 |
| Flextronics | Singapore (incorporated, founded in USA) | 26 108.6 | 150 000 |
| Jabil Circuit | USA | 18 336.9 | More than 175 000 (2015) |
| Sanmina | USA | 5 917.1 | 33 144 |
| Celestica | Canada | 5 796.1 | 22 600 |

Sources: Company websites.

Contract manufacturers manage their own vast GSCs through the purchase and sourcing of parts and components from a large group of suppliers, and are today the largest purchasers of electronics components (Sturgeon and Kawakami, 2011). Contract manufacturers are also highly capable firms that invest in innovation to improve the services they offer to branded firms. Jabil Circuit, for example, was one of the earliest companies to use 3-D printing technology to develop product prototypes designed for branded firms (Shinal, 2013). In terms of patent ownership, Foxconn holds more than 64,000 patents globally (McGrath, 2012). It has also created its own robots, called Foxbots; in 2014, 10,000 Foxbots were used to assemble the Apple iPhone 6, and it was announced that each Foxbot was able to assemble 30,000 devices (Comparecamp.com, 2014). Foxbots did not replace workers completely because they lacked the precision necessary to assemble Apple products. Rather, they were used for simple assembly work such as tightening screws, polishing metal, and packaging the iPhones (Whitman, 2014). Moreover, Foxconn hired an additional 100,000 workers to manufacture up to 400,000 iPhone 6s daily – the highest level of output ever achieved by the contract manufacturer (Luk, 2014; Slivka, 2014).

In recent years, however, contract manufacturers have been subject to public scrutiny over their labour conditions. In China, suicides, riots and strikes have occurred in contract manufacturer factories (Chan, 2010; China Labor Watch, 2014). In Malaysia, a report highlighted poor working and living conditions of migrant workers from Bangladesh, Indonesia, Myanmar, Nepal and Viet Nam in the factories of Jabil Circuit and Flextronics (Bormann, Krishnan and Neuner, 2010). Flextronics was found to be employing bonded foreign labour in Malaysia after a frantic search for workers to meet short iPhone 5 production deadlines (Simpson, 2013). In 2014, a Verite Report commissioned by the US Department of Labor revealed bonded labour in the electronics industry in Malaysia, where several contract manufacturers have large factories (see box 1 in the next section).

From a contract manufacturer perspective, violations of labour conditions can be attributed to customer relationships. In the Foxconn case, it was suggested that cost cutting by Apple coupled with last-minute changes to manufacturing orders created harsh working conditions that led to the worker suicides. However, the priority of maintaining long-term relationships with branded firms is higher than other concerns. Foxconn's Vice-President Cheng Tianzong noted, "Some major clients are very concerned with the Foxconn employee suicides, but many of them are our long-term

partners. So it doesn't affect Foxconn's orders" (quoted in Zhao, 2010, in Chan, Pun and Selden, 2013).

Contract manufacturers as well as other suppliers face a conflict between labour standards and a just-in-time production model based on short production cycles which can lead to labour violations in GSCs. This is summarized by Foxconn CEO's Special Assistant Louis Woo in the following:

> The overtime problem – when a company like Apple or Dell needs to ramp up production by 20 percent for a new product launch, Foxconn has two choices: hire more workers or give the workers you already have more hours. When demand is very high, it's very difficult to suddenly hire 20 percent more people. Especially when you have a million workers – that would mean hiring 200,000 people at once. (quoted in Chan, Pun and Selden, 2013, p. 108)

All major contract manufacturers except Foxconn were founding members of the EICC. Foxconn is now an EICC member. When it comes to compliance with the EICC Code of Conduct, which requires enforcing the code on suppliers, contract manufacturers can face a greater burden because they have a larger number of suppliers than branded firms. Over the years the branded firms have consolidated their supplier bases and passed on many of their suppliers, in the tens of thousands, onto contract manufacturers (Gereffi, 2014; contract manufacturer personal interview, 2013). Contract manufacturers have argued that their low margins and tough price competition limit the resources available to them for monitoring all their suppliers (Raj-Reichert, 2011; Nadvi and Raj-Reichert, 2015).

### 1.2.3 Component suppliers

Component suppliers produce "key components" such as hard disc drives and dynamic random access memory modules; "secondary components" such as semiconductor chips and printed circuit boards, and "commodity components" such as power supplies, keyboards, cables and connectors (Curry and Kenney, 2004). This group of suppliers range from large and highly profitable global firms that design and produce technologically advanced components, such as Intel, to very small firms that produce parts and components at very low prices (Sturgeon and Kawakami, 2011). While the latter category of suppliers engage in relatively low value-added activities, they are needed by contract manufacturers and branded firms for inputs that go into final products. This category of firms comprises the vast number of suppliers in lower tiers of GSCs.

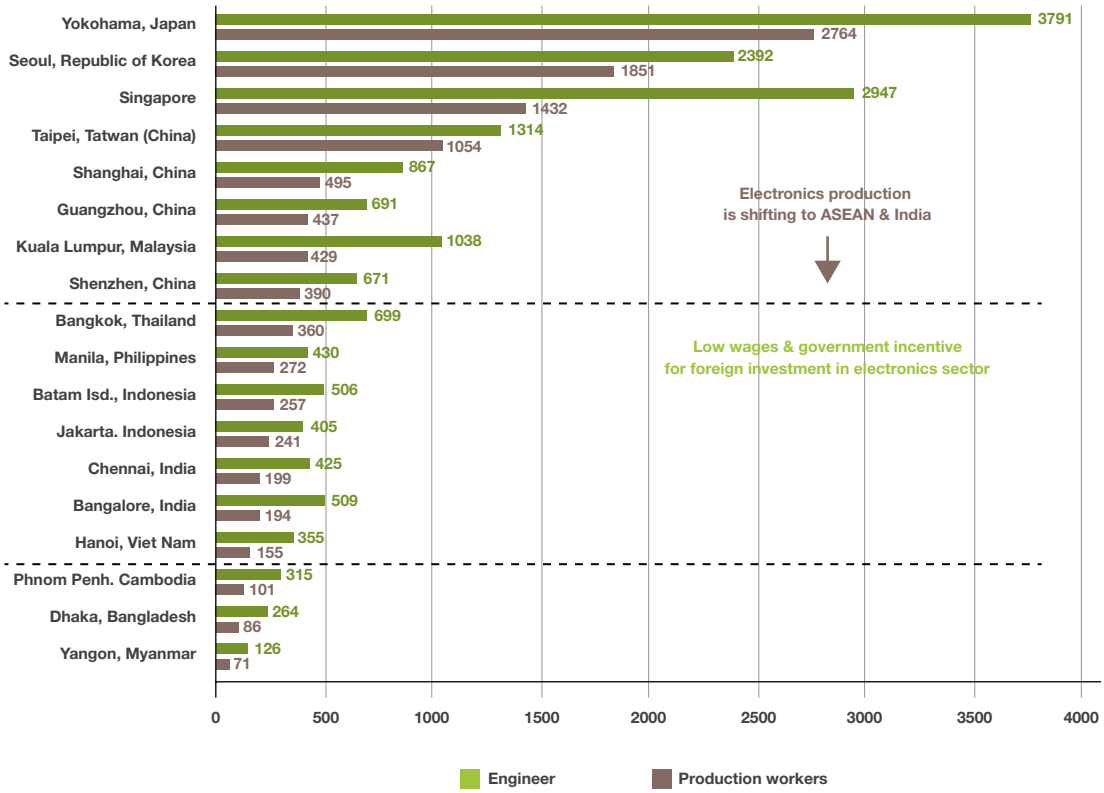
When it comes to labour conditions, it is suppliers in the lower tiers of GSCs which often do not comply or face enforcement of standards and regulations. Lower tier suppliers are usually smaller, have limited technical, managerial and financial resources, are often in countries with weak regulatory oversight, and rarely face pressure to comply with private standards. Yet it is at the lower tiers of GSCs where governance is needed, as the number of suppliers and workers increase the further one travels down the GSC (Nadvi and Raj-Reichert, 2015). Therefore, lower tier suppliers tend to fall into an overall governance gap and face a greater risk of labour violations. A study on the EU standard on the Restriction of Hazardous Substances (ROHS, described below in Section 4) shows how market access standards can overcome these limitations by reaching lower tiers of suppliers in GSCs where other private and domestic legislation failed.

# 2. Violations of labour standards and poor labour conditions

Common labour violations and poor working conditions faced by workers in the electronics GSC include low wages, non-standard forms of employment, forced labour, excessive working hours, health and safety risks, and low levels of trade unions. This section discusses these factors in detail and highlights China and Malaysia, two countries that have received increasing attention on labour violations in recent years.

Low wages have been the driving force for the continuous shifting of production to lower-cost locations (see figure 2.1). High proportions of female workers in the industry have also contributed to its low wages (Rasiah, 1993). Wages can also fluctuate as they are affected by boom and bust cycles in the economy. In Mexico, for example, daily wages after the financial crisis in 2009 fell to wage levels seen in 2005 (Luethje et al., 2013).

**Figure 2.1: Standard wages of manufacturing workers in Asia, 2013 (US$ per month)**




Source: Matsuzaki, 2015, from Japan External Trade Organization (JETRO).

One mechanism by which wages have been kept persistently low is through the wide-spread use of temporary workers. Temporary workers are also used excessively in electronics factories in order to easily hire and fire according to the ebb and flow of production cycles (ILO, 2014b). While there is no accurate global estimate of the number of temporary workers in the industry, statistics from different producer countries illustrate the high degree of non-standard employment relations. In Hungary it was estimated that in 2006 around 14 per cent of workers in the electronics industry

were temporary (Bormann and Plank, 2010). In the European Union, the electronics industry expanded its use of temporary workers by 27 per cent from 2003 to 2004 (Arrowsmith, 2006). Country labour laws have also been relaxed to make it easier for companies to hire temporary workers and for longer periods. Laws were also changed in response to weak job growth following the 2008 financial crisis (ILO, 2012).

Temporary workers normally receive lower wages and often without benefits (ILO, 2012). Women workers tend to stay on temporary contracts longer than men (Holdcroft, 2013). The job insecurity temporary workers face over contract renewals can create challenges in their lives. Insecurity over continuous income presents difficulties for managing a household that requires regular payment of services (electricity, school fees and so on), food and clothing purchases, and family planning. In countries such as China, Indonesia, Malaysia and Thailand women on temporary contracts may not get their contracts renewed if they become pregnant, get married, or reach a certain age (Holdcroft, 2013; Raj-Reichert, 2012). Finally, because of employment insecurities temporary workers are less likely to complain or raise concerns about their working conditions (Salame, 2011). This can lead to unchecked problems in factories.

The incidence of human trafficking and forced labour in the electronics industry has come to light in recent years. Sections of GSCs which are at greatest risk involve labour-intensive and low-skilled production in low-cost and low-waged countries. These areas of the GSC are also dominated by women and foreign migrant workers. Foreign workers have faced serious human rights violations, for example by having their passports retained (Raj-Reichert, 2012; Verite, 2015). Foreign workers also experience debt-induced forced labour through high recruitment fees: Verite (2015) found that the average amount a foreign worker paid for recruitment fees in the electronics industry in the South-East Asia region was between US$500 to US$1,200. Foreign workers can also face lower pay and discrimination.

Excessive working hours and overtime are common features in electronics factories. Low wages are only one reason why workers work excessive hours (Luethje et al., 2013). Overtime is also the result of supplier relationships with buyer firms. Factory managers have forced more hours on workers to meet tight production deadlines and unexpected changes to order specifications (ILO, 2014b).

The electronics industry is one of the most chemical-intensive industries (LaDou, 2006; Smith, Sonnenfeld and Pellow, 2006). Occupational health and safety risks include repetitive motion injuries, eyesight problems, use of dangerous machinery and exposure to hazardous chemicals (Verite, 2015). Incidence of cancers, other illnesses, and deaths from exposure to hazardous chemicals are widespread (Matsuzaki, 2015; Smith, Sonnenfeld and Pellow, 2006). Psychological and emotional pressure faced by fast-paced, overworked, underpaid, and militarized work zones have also created dangerous working conditions (Chan, Pun and Selden, 2013).

A study by the European Agency for Safety and Health at Work (2012) found GSCs (generally not limited to the electronics industry) where buyer firms and suppliers in subcontracting relationships face more adverse health and safety effects, whereas direct relationships between buyer firms and suppliers have shown positive effects on health and safety conditions. This is because buyer firms can impose compliance over health and safety standards in contracts with direct suppliers but not always in subcontracting relationships. Subcontracting and outsourcing relationships can create vulnerabilities particularly amongst small suppliers that lack knowledge and sophisticated systems of risk management over health and safety conditions (Raj-Reichert, 2013).

Finally, there are very low levels of trade unions throughout the electronics industry GSC. This is due to a combination of a workforce made up of a large number of suppressed and voiceless foreign and rural migrant workers, temporary workers and female workers, and jobs located in free trade zones and countries with suppressive policies against trade unions. A rampant anti-trade union culture also pervades amongst United States branded firms in the industry (Raj-Reichert, 2012).

## 2.1 Malaysia

The electronics industry is a significant pillar of the overall economy in Malaysia (Rasiah, Crinis and Lee, 2015). In 2013, it made up 32.8 per cent of all Malaysian exports and represented 27.2 per cent of all employment. It is also heavily dependent on foreign corporations, which contributed 86.5 per cent of investments in the industry in 2013. Women made up 80 per cent of its workforce in 2013. Wages in the industry appear at the lower end of all other industrial sectors (Verite, 2014).

The World Bank estimates that Malaysia has the largest number of foreign workers overall in South-East Asia. The exact numbers are difficult to come by as the Malaysian Government has been reluctant to release official data. Recent estimates of foreign workers are four million, with close to half, or around 1.8 million, undocumented (World Bank, 2013a). This represents around a quarter of the total number of employed workers in the country (Rasiah, Crinis and Lee, 2015). Of registered foreign workers, 98 per cent are in semi and low-skilled jobs (Kaur, 2015), with the majority employed as production and operation workers in the manufacturing sector (Devadason and Meng, 2014). Today, Malaysia is considered a low-wage labour-receiving country in the region (World Bank, 2013a).

In the Malaysian electronics industry, foreign worker estimates range from 20 to 60 per cent of the total workforce. The main sending countries are Bangladesh, Indonesia, Myanmar, Nepal and Viet Nam (Bormann, Krishnan and Neuner, 2010; SOMO, 2013). Firms prefer foreign workers because they are more easily exploited to work overtime, receive lower wages, and accept poor working and living conditions (Kaur, 2015). Before the 2014 minimum wage law in Malaysia some foreign workers in the electronics industry were found to be paid as low as half the domestic wages (Verite, 2012).[2]

The high presence of foreign workers is the result of government policies since the 1990s to overcome labour shortages in lower-skilled and lower-waged jobs in electronics factories (Philips and Henderson, 2009). These policies have been inconsistent and ad hoc, and have led to increasing the vulnerability of foreign workers to abuse. The Malaysian Government has signed Memorandum of Understanding (MoU) Agreements with sending countries such as Bangladesh, China, India, Indonesia, Pakistan, Sri Lanka, Thailand and Viet Nam. In the past such MoUs have prohibited foreign workers from joining trade unions and have allowed employers to withhold their passports (SOMO, 2013). Foreign workers have also entered the country with tourist visas and overstayed in order to be hired by labour agencies (Kanapathy, 2008).

Foreign workers have been charged an annual levy since 1992, with the amount increasing in years that experience economic downturns (Kaur, 2015; Verite, 2014). Employers, both electronics firms and labour agencies, have annual quotas on foreign worker permits (Kaur,

2 A minimum wage legislation that covers foreign workers in Malaysia was passed in 2014. It is not yet clear what outcomes this has had for wages for foreign workers in the electronics industry. It has been reported that the new minimum wage has not kept up with inflation (Malaysian trade union official, personal interview, 2015).

2015). In order to get around the quotas, electronics firms have used several labour agencies at a time to receive higher numbers of foreign workers (Verite, 2010; SOMO, 2013).

In September 2014 a report by the international non-governmental organization (NGO) Verite, which was commissioned and funded by the US Department of Labor, found a high incidence of forced labour amongst foreign workers in the electronics industry in Malaysia (see box 1). The findings of the Verite report coincided with the downgrading of Malaysia to violator status in the Trafficking in Persons report in 2014 by the US Department of State.

### Box 1:
### Forced labour in the Malaysian electronics industry

The Verite study was conducted in different parts of Malaysia and on workers in over 100 different factories from 2013 to 2014. With a sample size of 501 electronics workers interviewed, the study found 28 per cent of all workers to be in situations of forced labour. Amongst foreign workers alone, there was a 32 per cent incidence of forced labour. The main findings of the study focused on several aspects of forced labour:

1. High recruitment fees charged in the home or sending countries and in Malaysia led to debt bondage through excessive working hours. Of the workers interviewed, 92 per cent paid fees and 77 per cent had borrowed to do so, while 92% per cent of workers felt compelled to work overtime in order to pay off their debts. It took some workers two years (out of a three-year contract) to pay off debt through wage reductions. Excessive fees included a government levy on the use of foreign workers which by law can be extracted from worker wages.
2. Passports of foreign workers were withheld by labour agencies. They were returned to workers for a fee or not at all during their stay in Malaysia. Of the workers interviewed, 94 per cent had had their passports taken away and 71 per cent felt it would be difficult to get them back.
3. Employers restricted the movement of foreign workers. They also instituted a sense of fear and insecurity through threats of deportation, which was compounded by frequent government raids on undocumented workers. As a result, foreign workers were afraid to move around freely in the country.
4. Foreign workers were unable to change employers or break their work contracts to return home. This was reported by 50 per cent of workers interviewed.
5. Deceptive recruitment in the home or sending countries resulted in foreign workers not receiving the wages or the type of work they were promised.
6. Foreign workers were excessively dependent on labour agencies for welfare issues such as housing, medical care, food, transport, legal statu, and employment status. 92 per cent of workers received housing from a labour agency. Foreign workers were vulnerable to abuse and were powerless over working conditions and living situations. Registered labour agencies were the only ones authorized to renew or cancel a foreign worker's work permit.
7. Foreign workers hired by third party organizations, such as labour agencies, were more vulnerable to forced labour.

*Source:* Verite: *Forced labor in the production of electronic goods in Malaysia: A comprehensive study of scope and characteristics* (Amherst, 2014).

## 2.2 China

From 2002 to 2008, workers in the Chinese electronics industry doubled to three million (Lee, Gereffi and Nathan, 2013). Many of them are young persons from rural areas. In China, an internal migration control policy, the hukou system, restricts the permanent residency of a person to the birthplace of their mother, thereby prohibiting permanent relocation of individuals within the country. After reforms in the 1970s, temporary hukous outside of permanent residencies were permitted for temporary jobs in other locations. This has been attractive for young people with rural hukous who want to reside in cities for jobs (Selden and Wu, 2011; Smith, 2003). There are around 260 million rural workers with temporary hukous working in industrial regions in the country (Wang, 2014). Rural hukou holders, however, do not receive the higher welfare benefits afforded to urban hukou holders, which include employer contributions to pensions and insurance, as well as access to education and other services (Selden and Wu, 2011).

The hukou system has been fundamental in creating and maintaining a pool of cheap labour flow from rural areas to factories in urban areas (Selden and Wu, 2011; Smith, 2003). Because these young workers have travelled to unfamiliar cities and work regimes they are more vulnerable to exploitation. Their temporary hukous restrict them to a specific employer they are unable to change; employers have retained hukou permits, and deposit fees are often withheld, resulting in a form of bonded labour for many young workers (Smith, 2003; Chan and Senser, 1997). Many companies do not sign employment contracts with migrant workers, resulting in workers being paid below the legal minimum wage in some locations (Chan and Nadvi, 2014). By some estimates, 90 per cent of rural workers in the electronics industry live in company-provided dormitories that can be hostile environments (EICC, 2012).

Today, there is a shortage of workers for the electronics industry in the eastern coastal regions of China. This is partly due to a lack of rural workers willing to leave their homes for faraway jobs in cities with low pay and poor benefits. Also, a 2004 policy that raised farm incomes, stabilized food prices and increased infrastructure development in rural areas has contributed to the diminishing attractiveness of temporary city jobs (Wang, 2014). In 2004, there was a shortage of one million workers in the Pearl River Delta and a shortage of 300,000 workers in Shenzhen – both of which are major locations for electronics manufacturing (Chan and Nadvi, 2014). This has created new challenges in the industry such as the exploitative use of lower-paid student interns and the excessive use of overtime. In 2011 over 85 per cent of Foxconn workers were between 16 and 29 years old (Chan, Pun and Selden, 2013). In Pegatron factories (another Apple supplier), there were over 10,000 student workers or interns, aged 16 to 20 years (China Labor Watch, 2013). Student workers recruited from local high schools and technical colleges complain of long working hours and work that is unrelated to their studies (Verite, 2015). The incidence of child labour or workers under 16 years of age was found in several suppliers to Samsung (China Labor Watch, 2012a, b and c; 2014). There have also been reports of children abducted from poor rural areas by labour recruiters and the use of prison labour in the industry (Verite, 2015).

Long and excessive working hours have plagued many electronics factory workers in China. Factories of large contract manufacturers run up to three shifts a day, five to seven days a week (Luethje et al., 2013). At Foxconn, which employs close to 1.4 million workers in China, a working day can last up to 12 hours with a day off every two weeks (Chan, 2013). Rural workers who are paid low wages resort to regular

and excessive overtime to earn more income. However, overtime can also be forced. For example, an additional three to five hours per day forced on workers, resulting in 11–13 hour shifts, were found in factories of suppliers to Samsung. Overtime hours have been found to be as high as 150 hours a month for a single worker in these factories (China Labor Watch, 2012a; 2015). Deaths of workers from exhaustion at supplier factories have also been reported; several worker deaths in Pegatron factories manufacturing iPhones were recently reported as "cause unknown" (China Labor Watch, 2015).

Health and safety risks are also rife. Poisoning from inhalation of n-hexane – a chemical used in cleaning solutions for screens – has caused irreversible neurological damage to workers in some factories. Workers exposed to benzene have contracted leukemia and lymphoma. Without adequate health insurance or worker compensation systems in China, many workers are left alone and without financial support after poisonings and illnesses leave them unemployable (Blanding and White, 2015; Verite, 2015).

Due to an ineffective trade union system, there has been a large rise in worker disputes through legal channels. Workers have also increasingly resorted to work stoppages, wildcat strikes and protests. Since the onset of the labour shortages, worker disruptions have become more organized and signal a new wave of labour activism in China (Chan and Nadvi, 2014). In 2012 a Foxconn factory in Zhengzhou stopped production of iPhones twice in a two-week period due to worker protests and walk-outs of up to 4,000 workers over working conditions (Ho and Culpan, 2012).

The rise in labour disputes coupled with labour shortages has been responded to by some local governments with increases to the minimum wage; in 2010 alone, 30 provinces in China increased minimum wages (China Labor Watch, 2011). In Shenzhen, where the largest Foxconn factory is located, the local government increased minimum wages in 2011 from 900 to 1,100 yuan (CNY) a month. This occurred a few days after Foxconn increased its workers' monthly pay from CNY 900 to 2,000 following the worker suicides (Chan and Nadvi, 2014). Table 2.2 shows wages in Shenzhen increasing significantly, and above inflation, since 2004 in response to labour shortages and worker unrest.

**Table 2.1: Minimum wage changes in Shenzhen, 2003–11**

| Year | Minimum wage | Increase (%) | Inflation rate (%) |
|---|---|---|---|
| 2003-04 | 600 | | |
| 2004-05 | 610 | 1.7 | 1.8 (2005) |
| 2005-06 | 690 | 13.1 | 1.5 (2006) |
| 2006-07 | 810 | 17.4 | 4.8 (2007) |
| 2007-08 | 850 | 4.9 | 5.9 (2008) |
| 2008-09 | 1 000 | 17.6 | -0.7 (2009) |
| 2009-10 | 1 000 | 0 | 3.3 (2010) |
| 2010-11 | 1 100 | 10 | 5.4 (2011) |

Source: Chan and Nadvi, 2014.

The central Chinese Government has also responded to labour shortages and worker unrest by improving workplace regulations and labour rights. This included the passage in 2007 of the Employment Promotion Law which set guidelines for local governments on monitoring employment agencies and facilitating vocational training; the Labour Dispute Mediation and Arbitration Law which simplified legal procedures for mediation and arbitration; and the Labour Contract Law which legally obliges employers to provide written contracts with conditions of termination. The Labour Contract Law in particular was passed to strengthen job security, payment of proper wages and benefits, and reduce the use of temporary and seasonal agency workers. In 2010, a Social Insurance Law was passed to provide basic social security for the whole country. These laws have been implemented unevenly at the provincial and local levels of government throughout the country and particularly in places where local governments favour business interests (Chan and Nadvi, 2014; Wang, 2014). Luethje et al. (2013) find that Chinese labour laws on overtime are not enforced by local governments in order to lure and keep factory jobs in their cities. For example, in Shenzhen an exemption to the labour law by the Labour Bureau allowed for 14-hour workdays at a Foxconn factory.

# 3. Economic and social upgrading and downgrading

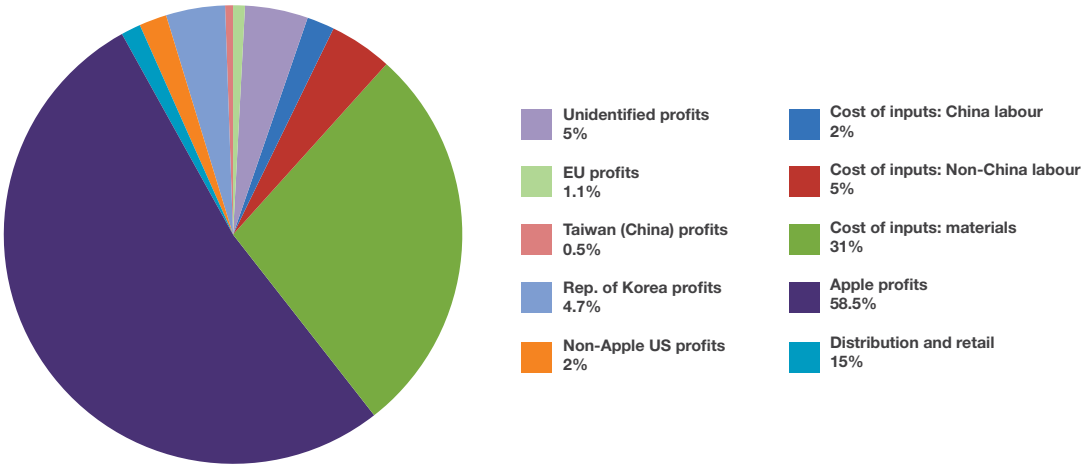
## 3.1 Economic upgrading/downgrading

Economic upgrading is the process by which a firm in a GSC enters a new phase of producing higher value-added products that afford it higher prices, revenue and/or profit (Humphrey and Schmitz, 2002). According to the global value chain (GVC) framework, there are four paths to economic upgrading (Humphrey and Schmitz, 2002):

- Process upgrading: increasing production efficiency through improved organization of production systems or the use of superior technology.
- Product upgrading: shifting into new or more sophisticated product lines that increase unit values.
- Functional (or intra-sectoral) upgrading: adding or moving into new, superior functions, such as coordinating outsourcing, logistics and quality; design or marketing, or abandoning lower value-added functions to focus on higher value-added activities.
- Chain (or inter-sectoral) upgrading: moving into a new GSC such as from manufacturing radios to computers.

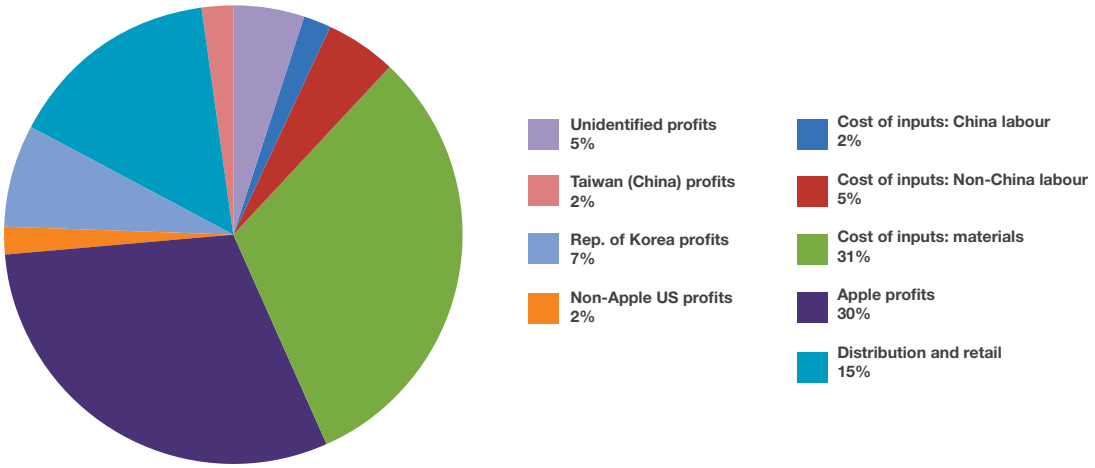
All forms of upgrading can lead to more skilled work (Barrientos, Gereffi and Rossi, 2011). One way of measuring economic upgrading is by determining where, by whom, and how much value is captured through profits for a product. Kraemer, Linden and Dedrick (2011) have shown that only a miniscule amount of value added for the Apple iPod and iPad is captured by suppliers in China. Figures 3.1 and 3.2 illustrate the vast proportion of profit that is gained by Apple compared to suppliers in China for the iPhone and iPad.

**Figure 3.1: Distribution of value for the Apple iPhone, 2010**




Source: Kraemer, Linden and Dedrick, 2011.

**Figure 3.2: Distribution of value for the Apple iPad, 2010**




Source: Kraemer, Linden and Dedrick, 2011.

It is thought that firms can achieve economic upgrading through learning from buyer firms and from compliance with product standards (e.g. technology and quality standards) and process standards (e.g. quality management systems, and labour and environmental standards). But while standards can bring about the increased capabilities and competitiveness associated with economic upgrading, they can also contribute to worse positions for suppliers in GSCs. For example, suppliers may be able to improve process standards but not product standards, or may be unable to achieve functional upgrading due to intellectual property rights restrictions of buyer firms. Moreover, standards compliance can be costly for small suppliers whose competitiveness is based on low-cost production and which operate with low margins (Racine, 2011). Companies may choose not to upgrade, especially if doing so leads to riskier and higher competition. In the computer industry, for example, economic "downgrading" has been a business strategy of firms to avoid competition with branded firms (Barrientos, Gereffi and Rossi, 2011).

## 3.2 Social upgrading/downgrading[3]

The ILO Decent Work Agenda sets out that economic upgrading by firms should go hand in hand with social upgrading in terms of improvements in worker conditions and rights. Social upgrading thereby includes secure employment, social protection, living wages and benefits, and the right to freedom of association, collective bargaining and social dialogue. It is thought that by moving up the value chain through economic upgrading into higher value-added production, firms would move into production processes that require more highly-skilled workers and which are less exploitative and thereby result in higher wages and benefits and improved working conditions. Upgrading can also lead to more technically advanced manufacturing processes, for example automation, that can have lower occupational health and safety risks. However, the idea that economic upgrading inevitably leads to skills development, permanent employment, social protection, rights at work, and protection from exploitation and abuse must be empirically tested. This requires understanding whether and how workers embedded in GSCs can harness, enhance and exercise their rights and capabilities through channels of economic upgrading.

The overall evidence so far suggests that "economic upgrading can but does not automatically or inevitably lead to social upgrading" (Barrientos, Gereffi and Rossi, 2011, p. 301). Where social upgrading in GSCs has occurred, for example, is amongst marginalized workers such as women and rural migrants who in the past had few opportunities for employment. Employment for these workers has in some cases led to economic and social empowerment (ibid.). However, the social benefits for women in particular can be small, as improvements in the quality of employment, which includes pay, benefits, and opportunities to move into higher paying work, are often limited. Indeed, job creation does not automatically lead to improvements in people's lives. This has been the case at Foxconn, which created jobs for over a million workers in China albeit with very harsh working conditions (ibid.). Further, irregular jobs or non-standard forms of employment, which are rampant in the electronics industry GSC, have been shown to consistently suffer from a "decent work deficit" (ibid., p. 330).

It is also possible that economic upgrading can lead to social downgrading. For example, suppliers that upgrade into higher value-added activities may have to meet additional costly standards on quality, and without a commensurate increase in prices can face pressure to lower labour costs through the casualization of workers. There are challenges to capturing this phenomenon methodologically which may limit our current understanding of processes that lead to social downgrading (ibid.). Thus, the links between economic upgrading and social upgrading are not well understood and further research is needed into the conditions that result in a positive relationship and how they can be promoted through public and private measures.

## 3.3 Economic and social upgrading in the electronics industry

After the 2001 technological bubble and the entry of China into the global marketplace, contract manufacturers moved much of their low-cost, low value-added, high-volume production facilities in Mexico and Eastern Europe to locations in East Asia to take advantage of newer lower-cost locations. There is some evidence that the

3 For an in-depth discussion of a conceptual framework for assessing the relationship between economic and social upgrading, see Barrientos, Gereffi and Rossi (2011).

existing facilities in Mexico and Eastern Europe upgraded to higher-value production by replacing manufacturing that had previously taken place in the United States and Western Europe (Sturgeon and Kawakami, 2011). However, these developments did not always lead to beneficial outcomes locally.

Research by Plank and Staritz (2013) on economic upgrading in the electronics industry in Central and Eastern European countries has found that relocation by MNCs in Hungary of high-volume, low-cost production to the "newer" lower-cost locations of Bulgaria, Romania, Ukraine and China resulted in the remaining MNC factories moving into the more knowledge-intensive R&D activities and production of higher value-added goods that had formerly been manufactured in Western Europe. However, while upgrading occurred in the MNC factories in Hungary, there was no significant upgrading of local Hungarian supplier firms, for example through backward linkages that increased their capabilities and value-added output.

Similar outcomes were seen in Mexico. In maquiladoras in the northern regions of Mexico, MNC factories have increasingly integrated R&D and design functions into manufacturing operations since the mid-1990s. Companies such as Sony and Samsung created R&D departments for product design in the maquiladoras. These changes also led to a rise in the level of technology utilized in the manufacturing processes. For example, factories that assembled televisions moved into flat panels, and digital and high-definition television sets. Firms also received greater local autonomy over decision-making, such as purchasing, supplier selection, manufacturing process and technology improvements, and product design – all evidence of upgrading (Carillo and Zarate, 2009). According to Carillo and Zarate (2009), the increase in local autonomy coincided with increases in quality standards and the increased use of skilled workers such as engineers. However, upgrading was limited to MNCs and did not spill over to local suppliers. There are similar findings by Sturgeon and Kawakami (2011) of upgrading amongst contract manufacturing facilities in Guadalajara, Mexico, which was said to demand more complex operations for factory workers, but did not lead to upgrading amongst local suppliers.

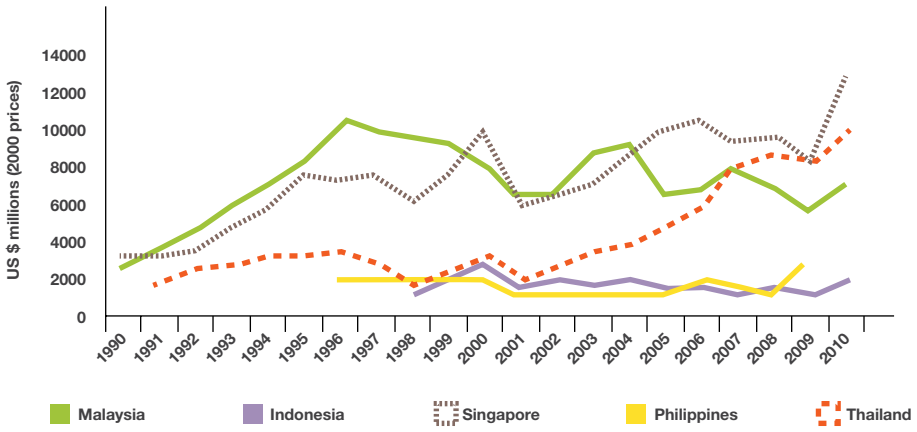
Research by Rasiah (2004) on electronics firms in Republic of Korea, Malaysia, Taiwan (China) and Thailand found higher wages associated with certain aspects of process upgrading such as higher levels of innovation intensity, technological intensity, and research and development. However, higher wages through skills upgrading were limited to workers in higher-skilled management and engineering positions, which normally make up only a small percentage of the overall workforce in the electronics industry. Moreover, differences in wages between higher- and lower-skilled workers can be stark. In Malaysia. management salaries ranged between US$1,000 and US$1,500 per month while unskilled production operator salaries were between US$127 and US$373 per month in 2002 (Luethje et al., 2013).

The benefits of social upgrading are not universally experienced by all categories of workers (Barrientos, Gereffi and Rossi, 2011). Take skills development as an example, which is an important aspect of social upgrading as it can lead to higher wages. Temporary workers have been shown to be less likely to receive training and job skills development (The Economist, 2012). This implies that social upgrading may not benefit temporary workers in the same way as it would permanent employees. This is an important consideration, given the large numbers of temporary workers in the electronics industry.

Government policies can also have a hand in limiting social upgrading. In China, local governments in Dongguan and Shenzhen did not always provide rural workers with skill development opportunities because maintaining a pool of low-wage, unskilled workers was part of their economic development strategy (Luethje et al., 2013). In Malaysia, the Government allowed the entry of low-waged foreign workers into the electronics industry as part of its industrialization policies to meet demand for lower-skilled jobs (World Bank, 2013b). The strong reliance on low-skilled foreign workers has stalled the upgrading process in the electronics industry (and other industries) since the 1980s, despite industrial policies to stimulate technological upgrading. Since the early 2000s there has been growing concern over the inability of local suppliers to MNCs to move up the value chain in Malaysia. Local suppliers continued to be engaged in low value-added activities such as assembly, testing and packaging using imported parts and components, and had very little proprietary advantages (Ernst, 2003; Chandran, 2008). Moreover, not only did Malaysian government policies on foreign workers lead to a suppression of wage growth, they also had the perverse effect of restricting the increase in the numbers of skilled workers (Philips and Henderson, 2009; Narayanan and Lai, 2014; Rasiah, 2002). By some accounts, these policies have led to the phenomenon of negative deindustrialization,[4] thereby affecting the overall Malaysian economy and its path to developed country status (Philips and Henderson, 2009; Narayanan and Lai 2014; Rasiah, Xiao-Shan and Govindaraju, 2014; Rasiah, Crinis and Lee, 2015).

Neighbouring Singapore shows a very different path to upgrading in its electronics industry. In value-added terms, the electronics industry in Singapore has surpassed all other countries in South-East Asia since the early 2000s (see figure 3.3) (Rasiah, Xiao-Shan and Govindaraju, 2014). According to these authors, its success in upgrading is credited to government policies and programmes. They include the Skills Development Policy in 1979 which included initiatives for technological upgrading in the electronics industry. The creation of the Economic Development Board in 1961 resulted in grants, equity, R&D labs and factory buildings to stimulate upgrading. Its financial capacity also allowed for acquisitions of foreign firms.

**Figure 3.3: Value-added in electronics exports, selected South-East Asian countries, 1990–2010**

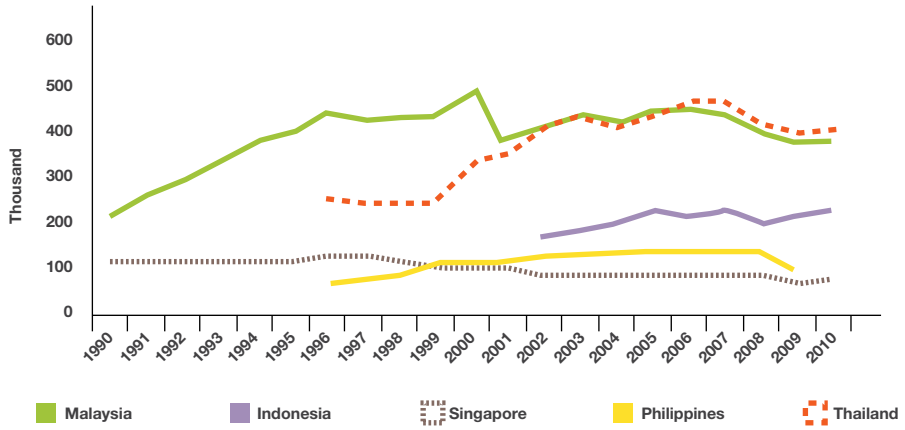



Source: Rasiah, Xiao-Shan and Govindaraju, 2014.

4 Negative deindustrialization is the inability of the diminishing manufacturing sector to be replaced by a higher value-added services sector during the stages of economic development (Rasiah, Crinis and Lee, 2015).

Singapore also instituted a policy during the 1990s to move out of a low-waged electronics industry sector that had begun to face rising wages since the 1980s. From the 1980s to 2000s, overall wage levels in Singapore rose close to developed country levels (Singapore US Embassy 2004). This resulted in the shift by MNCs of low-end assembly work such as hard disc drive assembly to Malaysia, while retaining non-labour-intensive and service-related activities such as engineering in Singapore. The electronics industry moved up the value chain during this time and is now host to high-end manufacturing such as semiconductors production, R&D, and product development (Raj-Reichert 2012; Singapore US Embassy 2004). Employment in the industry has fallen as a result of higher value-added production in the country (see figure 3.4) (Rasiah, Xiao-Shan and Govindaraju, 2014). Average monthly wages in the electronics industry per worker was around SGD$4,000 between 2000 and 2009. Wages in the electronics industry are also on average higher than in other manufacturing sectors in Singapore due to its higher productivity levels (Singapore Ministry of Trade and Industry, 2013).

**Figure 3.4: Employment in the electronics industry, selected South-East Asian countries, 1990–2010**




Source: Rasiah, Xiao-Shan and Govindaraju, 2014.

Today, Singapore is considered one of the few electronics manufacturing locations with little labour violation. One reason behind the high standards in working conditions has been attributed to a strong trade union presence in Singapore (Luethje et al., 2013; contract manufacturer in Singapore, personal interview, 2015). The National Trades Union Congress (NTUC) in Singapore has historically been a strong national trade union that has worked closely with MNCs to assure good working conditions in factories. The NTUC also played an important role in the rapid wage rise since the late 1970s. By contrast, in Malaysia the casualization of workers has had the opposite effect on wages (Rasiah, Xiao-Shan and Govindaraju, 2014) and a national trade union for the electronics industry was banned until 2010.[5]

5 In-house unions in Malaysia have been allowed since 1988, but they were not enforced and were intended rather to keep the labour movement fragmented (Jomo and Todd, 1994). Regional trade unions for the industry have been allowed since 2010. However, success has been limited; only three companies have been unionized in the state of Penang (trade union officials, Penang, personal interviews, 2015).

# 4. Governance for decent work in the electronics industry global supply chain

A large study by Toffel, Short and Quellet (2015) of 12 industries in 47 countries (which included 578 electronics factories) found that suppliers in GSCs are more likely to comply with labour standards in codes of conduct set by buyer firms when they are located in countries that participate actively in ILO standards, have strong labour laws and high levels of press freedom. Intergovernmental organizations such as the ILO not only establish international standards and monitor and assist governments in compliance with them; they also help to diffuse international norms to the private sector (and arguably also non-ratifying governments) on the expectations of business conduct (ibid.). The research also found that suppliers are more likely to comply with labour standards when their buyers originate from countries whose consumers are wealthy and socially conscious. The study's findings point to the need to have in place multiple regulatory regimes and mechanisms – public, private and public-private – which include the involvement of state regulations and non-state actor initiatives. These considerations provide a useful framework for understanding the opportunities and challenges of governance for decent work in GSCs.

The following subsections will discuss the different types of governance regimes and mechanisms over labour conditions currently in place that affect the electronics industry GSC. The final subsection discusses the prospects for governance of labour conditions in emerging markets that are key production and consumption locations in the world.

## 4.1 Public governance

In developed countries, most of the recent government regulations on GSCs have focused on the issues of conflict minerals and forced labour. Conflict minerals are tungsten, tin, tantalum, and gold, whose sales by armed groups in conflict regions such as the Democratic Republic of Congo (DRC) are used to finance fighting. The electronics industry is the largest consumer of these minerals from eastern Congo. These minerals are used in printed circuit boards, for example, which are an essential component in many electronics products such as mobile phones, laptops, video game consoles and more (Prendergast and Lezhnev, 2009).

As discussed above, incidences of forced labour have been revealed in the electronics industry which have raised public scrutiny in the countries of origin of MNCs engaged in outsourcing. The cost to workers in situations of modern slavery, according to the ILO (2009)'s "cost of coercion" calculation of forced labour across all industries globally in terms of unpaid wages and illegal recruitment fees is around US$21 billion a year.

In this section, regulations in the United Kingdom and the United States as well as EU Directives on conflict minerals and forced labour in GSCs will be discussed. All these regulations are geared towards increasing transparency in companies' GSCs. Given the very recent adoption of many of these regulations, their effects on GSCs and enforcement challenges are not yet fully known. The exception is the discussion below of the EU Directive on the Restriction of Hazardous Substances (RoHS) which entered into force in the mid-2000s, and whose effects on GSCs have been traced by recent research.

### 4.1.1 United States

In recent years a set of regulations has been passed in the United States aimed at preventing human rights violations in GSCs. The first of these was the California Transparency in Supply Chains Act (CTSCA) that came into effect in 2012. The CTSCA requires all retailers and manufacturers (both foreign and domestic) that conduct business in California with annual revenues of over US$100 million to provide public information on their efforts at eradicating slavery and human trafficking throughout their GSCs. The legislation aims to ensure that companies proactively assess risks of slavery and human trafficking before sourcing from suppliers. This is a significant piece of legislation, since many US branded firms in the electronics industry are headquartered in California. An early assessment of the legislation found that it would affect around 3,200 companies (Pickles and Zhu, 2013).

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2012 aims to stop publicly traded American firms from engaging in illegal trade in conflict minerals. The law requires companies that use tin, tungsten, tantalum and gold in their products to disclose the origins of these metals in the DRC and neighbouring countries. The legislation has shown that it is possible for branded firms to trace their GSCs down to metal suppliers; in the past this was considered untraceable by the industry. This has resulted in a partial mapping of the electronics industry GSC. Branded firms such as Dell, Hewlett Packard and Apple have notified their suppliers to comply with the legislation by confirming that the tin, tantalum, tungsten or gold supplied is from conflict-free areas within the DRC. The effects of the legislation have led to some companies sourcing some of their metals outside the DRC (Albers, 2013).

The US Government has made it a priority to combat trafficking in persons through its Trafficking Victims Protection Act of 2000. In 2012, US President Obama signed the Executive Order (EO) “Strengthening Protections against Trafficking in Persons in Federal Contracts”. The EO acknowledged that as the largest consumer of goods and services in the world the Federal Government has a duty to combat trafficking domestically and abroad to ensure that “American tax dollars do not contribute to” it. In 2013, federal purchases of computers and related advanced data processing equipment totalled US$5.31 billion6 (Verite, 2015). Regulations in response to the EO are the Federal Acquisitions Regulation (FAR) and Defense Acquisition Regulations Systems, which prohibit the use of forced labour in any goods or services used by the US Government. They apply to all federal contractors and subcontractors in the United States and abroad (Simpson, 2013; Verite, 2012). By requiring US contractors to assess human trafficking and forced labour risks with their subcontractors and suppliers at the lowest levels of their GSCs, these regulations travel far. Similar to the Dodd-Frank Act, government contractors must document and show their efforts to prevent trafficking. As will be seen in the discussion on private governance below, this has had an effect on the electronics industry and the activities and policies of individual firms.

### 4.1.2 United Kingdom

The Modern Slavery Bill which became law on 26 March 2015 is likely to affect 10,000 companies operating in the United Kingdom (Moote, 2015). Similar to the CTSCA, the UK law from October 2015 will require all companies with an annual turnover of

6 This amount is an underestimate because it does not capture the purchase of electronics inputs for certain types of hardware purchases (Verite, 2015).

£36 million or above to report yearly on the steps they have taken to prevent slavery and human trafficking in their GSCs. It establishes an independent Anti-Slavery Commissioner, and victims are to receive reparations from traffickers through the UK justice system. A legal duty is afforded to public bodies in the United Kingdom to report potential victims of modern slavery (Butler, 2015; United Kingdom Home Office, 2014).

### 4.1.3 European Union

The EU Directive 2014/95/EU on disclosure of non-financial and diversity information by certain large undertakings and groups, which comes into force in 2016, will require companies to disclose in their management reports information on policies, risks and outcomes on environmental matters; social and employee conditions including human rights, anticorruption and bribery issues; and due diligence processes to prevent and mitigate adverse impacts in GSCs. The Directive will apply to companies with more than 500 employees, which includes listed and public interest organizations such as banks and insurance companies. It is estimated that 6,000 companies will be affected by the Directive. EU Member States have by the end of December 2016 to transpose the Directive into national law (European Commission, 2015).

An EU Directive on conflict minerals will be adopted in the near future similar to the Dodd-Frank Act. Where the draft regulation goes further than the Dodd-Frank Act is with its wider coverage of (recent) conflict zones to include all high-risk conflict areas in the world. The proposed legislation would affect importers of raw minerals as well as manufacturers that use minerals in their production processes. The affected companies would have to report on how they identify and mitigate risks of conflict minerals in their GSCs. In May 2015, the European Parliament rejected the original proposal by the European Commission for a measure that companies would voluntarily comply with. Instead, the Parliament voted for mandatory regulation that companies importing minerals must abide by to ensure they are conflict-free in their GSCs. In addition, smelters and refiners must comply with a mandatory independent third-party certification scheme (European Parliament, 2015). The European Commission will also establish performance clauses in public procurement contracts and create a list of responsible smelters/refiners to further incentivize uptake of a responsible importer certificate. Public procurement purchases containing tin, tantalum, tungsten and/or gold will also be required to follow the OECD Due Diligence Guidance or equivalent schemes (European Commission, 2014).

The EU Directive on the Restriction of Hazardous Substances (RoHS) in the electronics industry came into force on 1 July 2006. It aims to address hazardous electronic waste shipments by reducing the hazardous contents in electronic goods. RoHS sets very low threshold levels for several hazardous chemicals, including lead, mercury, cadmium, hexavalent chromium and brominated flame retardants. As a result, it has a positive impact on health and safety conditions in factories by reducing exposure to these hazardous chemicals during manufacturing processes. Research by Nadvi and Raj-Reichert (2015) was able to trace RoHS compliance down the electronics industry GSC to small second-tier suppliers in Penang, Malaysia. These suppliers, who did not comply with private standards such as the EICC Code of Conduct, received minimal, if any, audits, monitoring or assistance over health and safety conditions from their (first-tier) customer firms. They also faced minimal government enforcement of the local health and safety legislation. However, they chose to voluntarily comply with RoHS and met the standard largely on their own. In the face of tough competition these suppliers felt they had to meet RoHs (and despite costly equipment replacements and production process changes) in order to maintain their positions in GSCs that exported

into the EU market. These findings show that market access standards (into one of the largest consumer markets in the world) can be a driver for improving working conditions down GSCs where private and local public governance measures fail.

Market access standards can also have a harmonization effect on industry. In the electronics industry some suppliers have found it costlier to run one production line that is RoHS-compliant together with another that is for non-EU exports, and as a result have forgone the latter. Brands such as Apple and Dell now require all their products sold anywhere in the world to be RoHS-compliant.

## 4.2 Private governance

### 4.2.1 EICC Code of Conduct

The EICC Code of Conduct is enacted by the Electronics Industry Citizenship Coalition, which is the largest corporate responsibility business group in the electronics industry. In July 2015 the EICC had 104 members (EICC website). The EICC Code of Conduct specifies guidelines on enterprise conduct and policies on labour, health and safety, the environment, ethics and management systems. It borrows heavily from the HP Supply Chain Code of Conduct and is also based on various international standards such as the OECD Guidelines for Multinational Enterprises, the Universal Declaration of Human Rights, ISO 14001, OHSAS 18001 and the Eco Management and Audit System. Firms that adopt the code must implement it with their suppliers. The implementation process involves the application of risk assessment tools, self-assessment questionnaires and the reporting of evaluation and third-party audit results on an online database that can be viewed by all EICC members in customer–supplier relationships (Raj-Reichert, 2011).

The Code of Conduct has been updated several times to meet new government regulations. In 2012, it was updated to include a section on conflict minerals to comply with the Dodd-Frank Act. Mired by the recent report on forced labour in Malaysia, which had not been reported by third-party audits against the EICC Code of Conduct, and faced with the US FAR legislation, the Code was further updated in 2014 to ban recruitment fees paid by workers (and return paid fees to workers) and to prohibit the withholding of worker passports (unless required by law) (EICC Code of Conduct 5.0, Section A.1, 2014). It came into force in Malaysia in April 2015.

### 4.2.2 Company initiative: Hewlett Packard (HP)

HP was one of the first companies in the industry to establish a supplier governance programme, which has been in place since 2000. HP is also considered a leader in corporate social responsibility (CSR). In 2013 it was in a top ten list of companies in the KPMG Survey of Corporate Responsibility. It has been on the FTSE4Good list for nine years. HP has been described as more proactive on social and environmental responsibility than Nike was in the sportswear industry (Saturday Extra, 2006), but has also faced a fair share of reporting on poor working conditions in its GSCs, for example over low pay, long hours, abuse of student workers and forced labour (Thomson, 2009).

HP's supplier governance programme follows the EICC Code of Conduct and goes beyond it. For example, it has standards for suppliers employing students and despatched workers in China, and monitoring in place to ensure their work is voluntary

and that adequate pay and social insurance are provided (Hewlett Packard, 2015b). HP is also affected by the US FAR legislation because the US Government is one of HP's largest customers. US federal government contracts made up almost 40 per cent of HP's contracts in 2013. One example is a US$3.5 billion contract signed in 2013 with the US Navy to run its communications network until 2018; this is the largest individual information technology project in the Federal Government (Taborek and Capaccio, 2013). In response to the US FAR, HP implemented a set of labour standards for its suppliers that bans the use of forced labour, the use of recruitment agencies in the hiring of foreign workers and recruitment fees for all workers, and promotes the direct hiring of workers in its GSC.

## 4.3 International governance

### 4.3.1 ILO standards

The ILO has identified eight of its Conventions as "fundamental". They are:

- Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
- Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
- Forced Labour Convention, 1930 (No. 29)
- Equal Remuneration Convention, 1951 (No. 100)
- Abolition of Forced Labour Convention, 1957 (No. 105)
- Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
- Minimum Age Convention, 1973 (No. 138)
- Worst Forms of Child Labour Convention, 1999 (No. 182)

These principles are also covered in the ILO's Declaration on Fundamental Principles and Rights at Work (1998). In 1995, the ILO launched a campaign to achieve universal ratification of these eight Conventions. There are currently over 1,200 ratifications representing 86 per cent of the possible number.

However, despite being ratified in most countries, Conventions No. 87 on freedom of association and No. 98 on the right to collective bargaining are weakly enforced throughout the electronics industry GSC. Many branded firms originate in countries such as China, the Republic of Korea and the United States that have not ratified these and other fundamental Conventions, although there are most ratifications for Convention No. 182 on the worst forms of child labour (see table 4.1). The EICC Code of Conduct does not include reference to these Conventions despite international pressure from trade unions and NGOs to afford these rights to workers in the industry. In the past, branded firms in the industry have vocally opposed their inclusion in the EICC Code of Conduct (Raj-Reichert, 2011). Firms have also questioned the need to respect ILO Conventions which have not been ratified by all the countries where their suppliers are located (Raj-Reichert, 2012).

**Table 4.1: Ratification of ILO Conventions, selected countries**

| | No. 87 | No. 98 | No. 29 | No. 105 | No. 100 | No. 111 | No. 138 | No. 182 |
|---|---|---|---|---|---|---|---|---|
| European Union | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| China | No | No | No | No | Yes | Yes | Yes | Yes |
| India | No | No | Yes | Yes | Yes | Yes | No | No |
| Indonesia | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Japan | Yes | Yes | Yes | No | Yes | No | Yes | Yes |
| Republic of Korea | No | No | No | No | Yes | Yes | Yes | Yes |
| Malaysia | No | Yes | Yes | No (denounced 1990) | Yes | No | Yes | Yes |
| Mexico | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Philippines | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Singapore | No | Yes | Yes | No (denounced 1979) | Yes | No | Yes | Yes |
| Thailand | No | No | Yes | Yes | Yes | No | Yes | Yes |
| United States | No | No | No | Yes | No | No | No | Yes |
| Viet Nam | No | No | Yes | No | Yes | Yes | Yes | Yes |

Source: ILO NORMLEX database, 2015.

### 4.3.2 UN Guiding Principles on Business and Human Rights (UNGP)

The UN Guiding Principles on Business and Human Rights (UNGP) was endorsed in 2011 by the UN Human Rights Council. The UNGP is unique in that it aims to hold companies responsible for violations of human rights in GSCs either through their own activities or business relationships, which is defined to include entities in a company's value chain (United Nations, 2011). The UNGP encompass a three-pillar framework that involves: 1) state duty to protect human rights; 2) corporate responsibility to respect human rights; and 3) making available remedy for victims of human rights abuses linked to business activity. For the electronics industry, pilot projects organized by John Ruggie, the Special Representative of the Secretary-General on human rights and business, included a review of HP's capacity building projects to improve worker grievance procedures at two suppliers in China. An umbrella study was also conducted on ten companies in the Netherlands on due diligence approaches to respecting human rights, which included Philips (Ruggie, 2013).

Since its creation, several international standard-setting bodies have adopted parts of the UNGP. They include the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises; the International Standards Organization (ISO) 26000:2010 Guidance on Social Responsibility inclusion of a human rights chapter aligned with the UNGP; the International Finance

Corporation's new sustainability policy and performance standards; and the European Union, which has developed guidelines for implementing the UNGP for the information and communication technology industry focusing on freedom of expression and privacy and workplace standards in the GSC. The UNGP have also been taken up by companies, governments, and NGO and worker organizations in their policies and campaigns. The impacts of these initiatives, however, are still too early to assess (Ruggie, 2013).

On 6 July 2015, negotiations over a binding treaty on business and human rights began in Geneva with the aim of making the UNGP international law. A binding treaty would provide an international standard that can help close global governance gaps in any production locations in GSCs throughout the world.

## 4.4 Social governance

Global framework agreements (GFAs) are negotiated between a multinational corporation and trade unions at the global scale. IndustriALL has negotiated GFAs with three electronics MNCs: Bosch (2012), Electrolux (2011), and Siemens (2012). The GFA with Siemens refers to the core labour standards of the ILO and the UN Global Compact. They include prohibition of forced labour in line with ILO Conventions Nos. 29 and 105, discrimination and intimidation in line with ILO Conventions Nos. 100 and 111, and child labour based on the age limits of ILO Convention No. 138 or higher if required by national laws. The GFA also respects the principles of equal treatment, the establishment of a minimum employment age, and freedom of association and collective bargaining according to ILO Conventions Nos. 87 and 98. It also stipulates appropriate remuneration based on national minimum wage laws and maximum working time based on national laws, collective bargaining agreements, and individual work agreements (IndustriALL, 2012a and b).

The GFA is implemented in four regions in distinct ways. In Europe, workers are represented by a European Works Council. In the US and Canada region, ten unions are represented in 35 different locations. There is also a special agreement in the US-Canada region to exclude "union busting". In the China region, there are 50 locations with union representation. In the India region, there are 10 union locations and the organizing of contract workers and suppliers' employees (Siemens presentation, 2015).

There are a few NGO and trade union campaigns and initiatives to improve worker conditions in the electronics industry GSC. The Good Electronics Network (GEN) is an international network of NGOs, trade unions, academics and others concerned with the labour, environmental and human rights conditions of the electronics industry. GEN is the main civil society stakeholder group critical of the EICC Code of Conduct. One of its key and ongoing campaigns is for the EICC Code of Conduct to improve its language on freedom of association by incorporating ILO Conventions Nos. 87 and 98 into the code (van Dijk and Schipper, 2007).

One of the GEN Secretariat's initiatives is Electronics Watch, which began in 2013 to become an independent monitoring body of working conditions in the electronics industry GSC (modelled after the Workers Rights Consortium). According to Electronics Watch, one in five computers bought in Europe is purchased by the public sector. Therefore, it has targeted public procurement, particularly universities, as a governance mechanism to improve labour conditions in the electronics industry GSC. Thus far, six universities in the United Kingdom and two public entities in the Netherlands have

become members (Electronics Watch, 2015). Electronics Watch is developing a code of conduct, a monitoring system and capacity-building initiatives for suppliers.

Verite is an international NGO that works to eradicate forced labour in GSCs. It also conducts social audits, is a certified third party auditor to the EICC Code of Conduct, and conducts training and capacity building for electronics firms on improving working conditions. In 2014 Verite released its extensive report (see box 1 above) on the evidence of forced labour in the electronics industry in Malaysia, which had a significant impact on the industry. Verite has also worked closely since 2012 with the US Government on forced labour and human trafficking. It helped launch President Obama's Executive Order on Strengthening Protections in Federal Contracts that incorporated elements of Verite's Ethical Framework for Cross-Border Recruitment (Verite, 2012). Verite also worked closely with HP to institute standards such as direct hiring of workers to avoid forced labour in its GSC (Biron, 2014).

## 4.5 Governance in the Global South

The rise of emerging markets in the Global South is significant for the governance of labour conditions in GSCs. Kaplinsky and Farooki (2010) predict that firms producing for consumers in low-income countries will face fewer pressures, drivers and incentives to improve labour conditions and standards. Compounded with weak regulatory capacity to implement and enforce legislation, and weak NGOs and trade unions in many developing countries, the value of and demand for labour standards may be reduced in the production and consumption locations in developing countries. We still know very little about whether consumers from developing countries will follow responsible consumption patterns or respond to campaigns such as Fair Trade in the same way as consumers in high-income countries. Theories of how and why some consumers in developed countries consume responsibly cannot simply be applied in the developing country context.

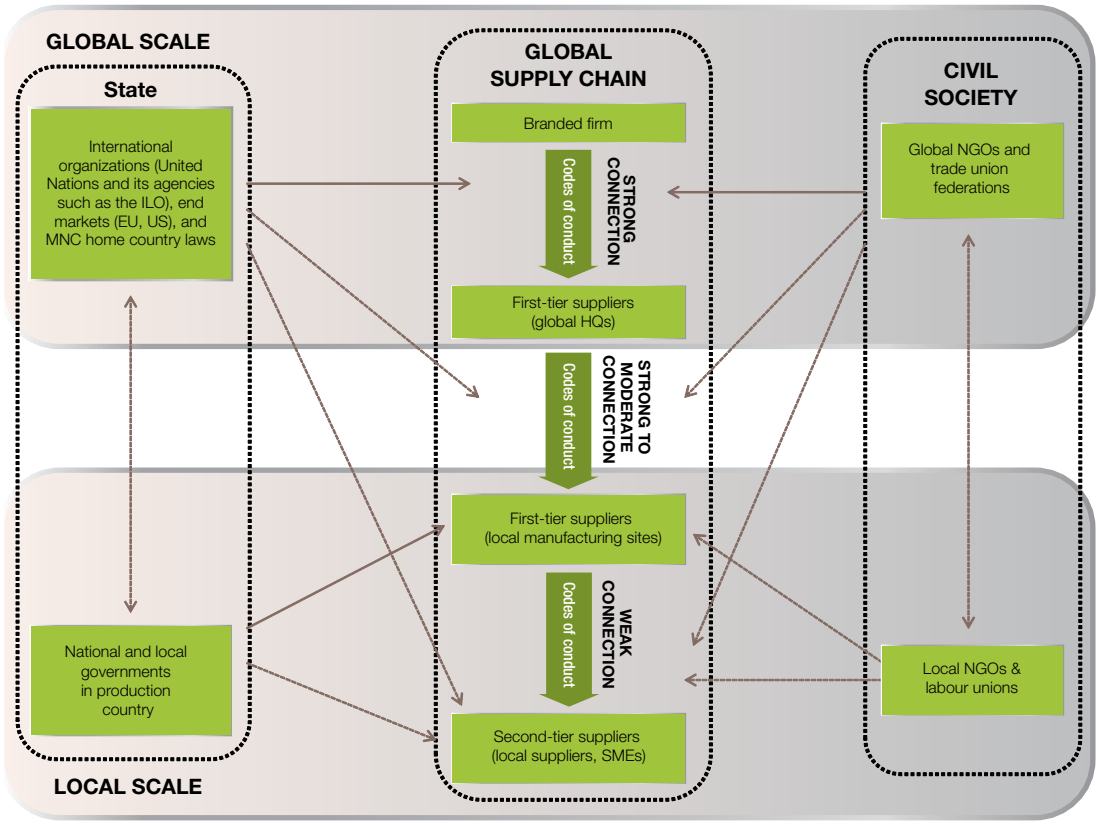
Comparisons of disposable incomes of the "middle class" in developed countries and developing countries show that the relatively smaller disposable incomes of the latter may not be large enough to drive responsible consumption behaviours. Research conducted thus far suggests there will not be a convergence of general consumption patterns by rising middle-class consumers in developing countries with those in developed countries. While "willingness to pay" surveys conducted in developing countries show that consumers do have environmental and social concerns over the products they purchase, empirical research on actual purchasing practices has not been widely conducted. Finally, consumer protection regulations in developed countries have largely been the result of organized consumer campaigns. In developing countries, however, the role of NGOs and campaigns is less developed and less effective (Guarin and Knorringa, 2014). Therefore, consumer protection regulations in developing countries cannot be assumed to follow the trajectory of developed countries. How these factors affect the future governance of labour in developing countries is an important consideration for ensuring decent work in sections of the GSCs located in the Global South.

# 5. Conclusion

## 5.1 Opportunities and challenges for social and economic upgrading

There is still more work to be done to understand how decent work can be promoted in the electronics industry through channels of economic and social upgrading. This work must begin with better understanding of both the positive and negative relationships between economic upgrading and social upgrading. Economic upgrading, while desirable for firms, may not always lead to social upgrading for all workers and surrounding communities. Further, economic upgrading can have the perverse effect of leading to social downgrading. From a global production network (GPN) perspective, which considers the relationships, power dynamics and institutions that underpin the network of firm, non-firm actors and governments in a GSC, one can examine where the opportunities and constraints are for ensuring that economic and social upgrading occur hand in hand. Figure 5.1 shows the governance reach that different actors at various scales of the GPN can have on labour conditions in the GSC. On the global scale, governance measures by international organizations and governments of outsourcing MNCs can travel to all tiers of the GSC and also have the ability to influence governance practices in host countries. National governments in production countries, however, are able to govern mainly within their national borders. Similarly, while global NGOs and trade union federations can influence the activities of firms in all levels of the GSC through campaigns, standards, and engagement with firms, international organizations and governments, the influence of local NGOs and trade unions in producing countries is normally restricted to the local scale, although relationships with global NGOs and trade unions can elevate attention of local problems to global actors. Within inter-firm relationships of the GSC, governance measures by branded firms are effective in reaching first-tier suppliers but not lower tiers. Branded firms say the lack of contractual relationships renders lower-tier suppliers invisible and prevents their ability to enforce standards and codes down GSCs (Raj-Reichert, 2012). However, with the rise of GSC regulations, it has been shown that branded firms can trace suppliers down the GSC.

**Figure 5.1: Governance in the electronics industry global production network**




Source: Author.

This report has shown that governments can play an important role in either providing opportunities or creating barriers for economic and social upgrading. In the case of Malaysia, government policies that allowed a massive influx of cheap foreign workers as a way of attracting foreign investments have not only prevented the electronics industry from upgrading but have led to human rights violations of foreign workers. In China, on the other hand, changes in government policies in response to worker unrest have led to increased minimum wages and social benefits which may pave the way forward for economic and social upgrading. Singapore is another example where government policies that shifted the electronics industry into higher value-added production led to both economic and social upgrading. The discussion has also shown that without government intervention, some economic upgrading that occurred amongst MNCs did not automatically lead to economic and social upgrading locally in countries such as Hungary and Mexico.

Different types of workers have different opportunities for social upgrading. For example, temporary workers may fall out of channels that allow for skills development and wage increases. While regularizing workforces is desirable, it may not be fully achievable in the near term given the vast numbers of non-standard forms of employment in the electronics industry. Therefore, how temporary workers can be afforded the benefits of social upgrading also requires further research.

Similarly, different segments of the GSC fall into different degrees of governance oversight. At lower tiers of the GSC, suppliers and workers tend to fall into a governance gap. Also, small suppliers in lower tiers of the GSC are less likely to have

opportunities for economic upgrading. This raises the question of how social upgrading can be achieved in other ways and independently of economic upgrading. Therefore, how lower segments of the GSC can achieve social upgrading is an important focus for further research.

While there are no exact numbers of how many workers fall into the different tiers of the GSC, we do know that contract manufacturers have the largest factories in the electronics industry. Therefore, this group of firms requires special attention with regard to their economic upgrading trajectories and whether they will ensure social upgrading for the millions of workers they employ. Recent research by Azmeh, Raj-Reichert and Nadvi (forthcoming) shows that contract manufacturers are no longer passive suppliers of branded firms but are moving up the value chain to become original design manufacturers, increasing their capabilities in technological innovation and emerging as brands in developing country markets. As contract manufacturers become more powerful players and lead organizers of GSCs in their own right, questions on their social responsibilities concerning working conditions must be asked.

Finally, in considering questions around social upgrading the rise of emerging markets is a context that must be considered in policy solutions. Whether leading firms and consumers from these markets will lead to a new race to the bottom in labour standards must be examined more closely in order to understand the future of labour governance in GSCs.

To overcome all these challenges, and in order to ensure social upgrading, a mix of private, public, and private-public governance measures is required. Private standards and codes of conduct create norms for industry which can be built on and strengthened through public and civil society governance influences. This is the example of the EICC Code of Conduct, which as an industry initiative was able to quickly adopt measures against forced labour in GSCs in response to an NGO investigative report and US regulations. NGOs such as Verite have shown the power such actors can have in not only exposing labour violations but also working with governments to develop regulations. At the end of the day, government regulations are the most effective stick to which firms will respond and change behaviours. This has been illustrated by the ability of the market access standard EU RoHS to travel down the GSC to reach small second-tier suppliers where private and local regulations had failed. More research on the role of public procurement in improving working conditions in GSCs, along the lines of the initiative begun by Electronics Watch, is also needed.

## 5.2 Policy recommendations

Based on the subsection above, the following recommendations for ensuring social upgrading and decent work in the electronics industry GSC are made. They are based on roles for the different actors in the electronics industry GPN. Thereafter, key questions for future research are presented.

1. Governments: public and public-private measures for social upgrading, including public procurement and market access conditions.

2. Firms/industry: working with governments, NGOs and trade unions for effective codes of conduct and ensuring compliance of lower tiers of suppliers, and improvements to purchasing practices that have led to labour violations and poor working conditions throughout GSCs; increasing participation by contract manufacturers in the formulation of private standards.

3. NGOs: working with governments and firms to expose labour violations and develop appropriate governance measures appropriate to local contexts and ensure enabling rights for workers.
4. Trade unions: working with governments, firms/industry and NGOs to expose labour violations and develop appropriate governance measures that represent workers' voices and ensure enabling rights for workers; helping identify where in GSCs poor working conditions are in order to link them to purchasing practices of lead firms and other factors that can be mitigated.
5. International organizations: ensure that the international treaty on the UNGP is an effective global governance mechanism for GSCs.

Research questions for future work:

1. What role can governments play to ensure that economic upgrading leads to social upgrading locally?
2. How can lower tiers of the GSC, where economic upgrading opportunities are limited, achieve social upgrading for workers?
3. How can temporary workers achieve social upgrading?
4. As contract manufacturers become more powerful players and lead organizers of GSCs, how does this affect governance over worker conditions and opportunities for social upgrading?
5. Will emerging branded firms and consumers from emerging markets lead to a new race to the bottom in labour governance in areas of GSCs located in developing countries?
6. In what ways can public procurement and market access standards lead to social upgrading in GSCs?

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