KPMG

cutting through complexity

Conflict minerals and beyond

Part two: a more transparent supply chain

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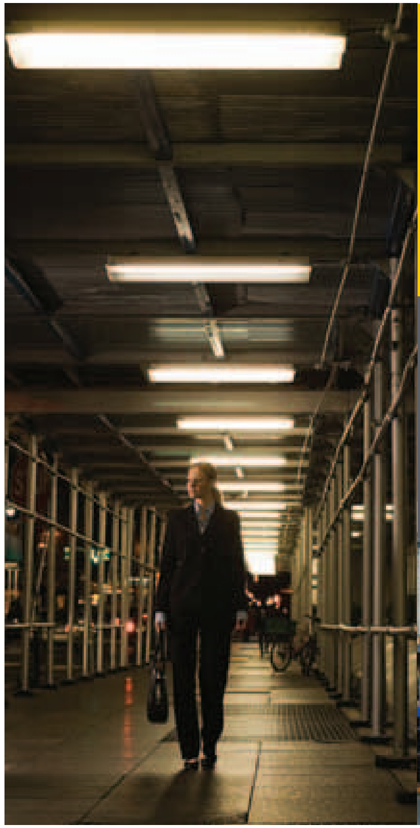
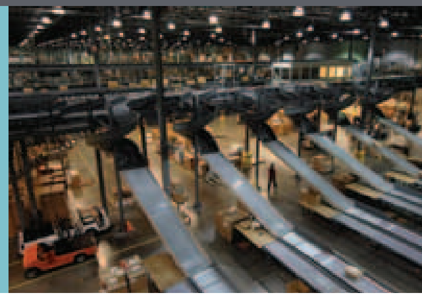




Introduction

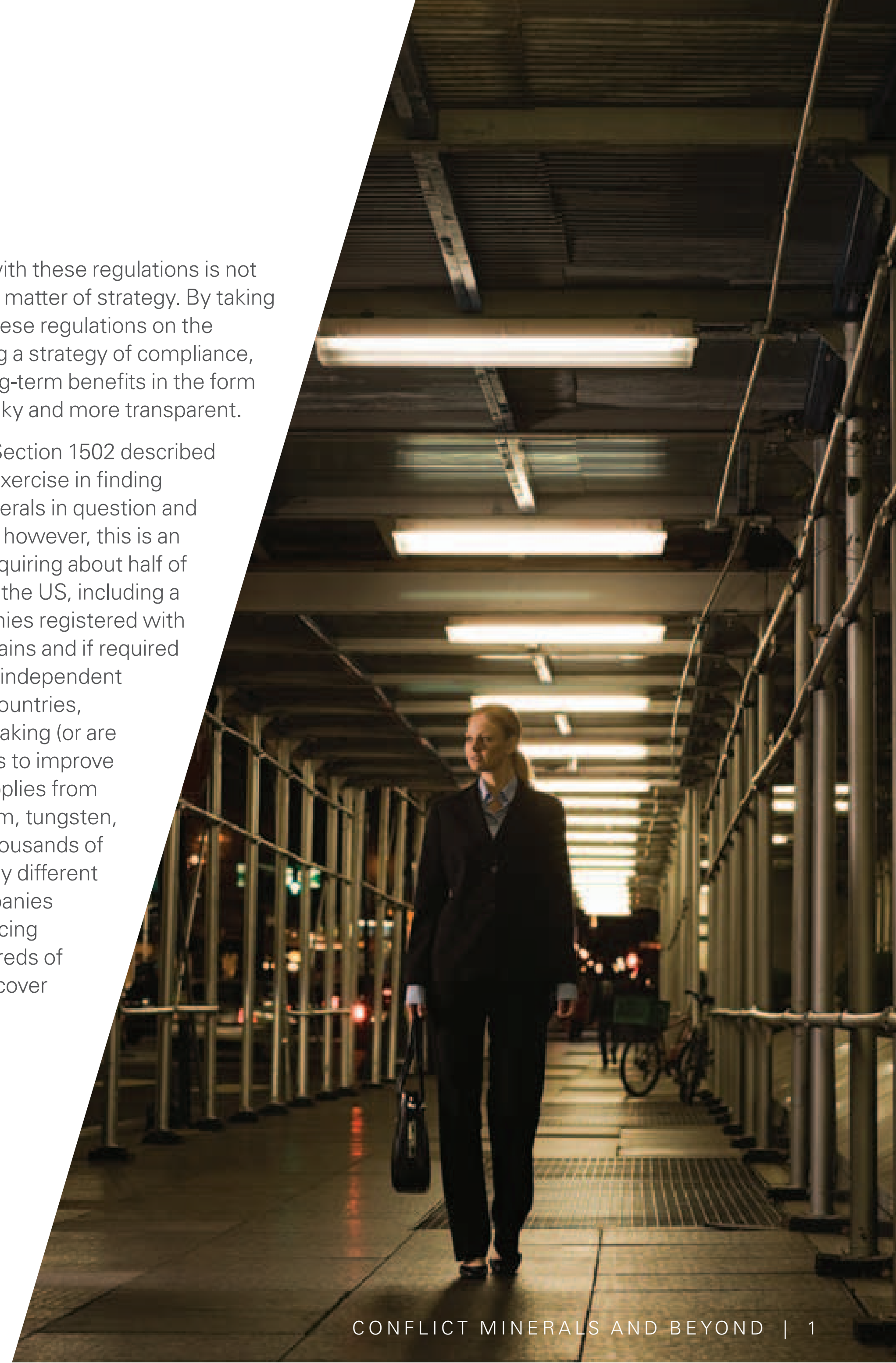
The "Miscellaneous Provisions" of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank" or the "Act") includes a section relating to Conflict Minerals (Section 1502).

Section 1502 is intended to curb the funding of militias in the Democratic Republic of the Congo (DRC) and the surrounding region by shining a light on minerals used to make tantalum, tungsten, tin and gold that are extracted in the area. If applicable, Section 1502 requires companies reporting to the Securities and Exchange Commission (SEC) that use these products to declare the status of their materials as "DRC conflict free", "Not been found to be DRC conflict free" or "DRC conflict undeterminable".

The final rule calls for these companies to describe the measures taken to exercise due diligence on the source and chain of custody of such minerals, including an independent audit of the measures, if required. It also requires the companies to describe the products manufactured that are "not been found to be DRC conflict free" (products that contain minerals that finance armed groups in the DRC). In addition, Section 1502 requires companies to describe the facilities used to process the conflict minerals, their country of origin, "and the efforts to determine the mine or location or origin with the greatest possible specificity."

This KPMG report is the second in a four-part series that covers Section 1502. The first report, published in September 2012,[1] focused on developing a compliance strategy. This second report covers the minerals supply chain. Future reports will cover: reporting and disclosure; and optimizing implementation of the compliance strategy. KPMG member firms believe that compliance with these regulations is not just a box-ticking exercise, but a matter of strategy. By taking a broad view of the impact of these regulations on the entire enterprise and developing a strategy of compliance, companies are likely to reap long-term benefits in the form of supply chains that are less risky and more transparent.

In theory, the requirements of Section 1502 described above may seem like a simple exercise in finding which products contain the minerals in question and tracing their origins. In practice, however, this is an extraordinarily complex task, requiring about half of all publicly traded companies in the US, including a large number of foreign companies registered with the SEC, to map their supply chains and if required have their results audited by an independent third-party. A number of other countries, including those of the EU,[2] are taking (or are considering taking) similar steps to improve the transparency of mineral supplies from conflict-affected areas.[3] Tantalum, tungsten, tin and gold end up in tens of thousands of types of products made by many different industries. The number of companies involved in supplying and producing these goods runs into the hundreds of thousands. Their supply chains cover the globe.



[1] Conflict Minerals and beyond. Part one: Developing a global compliance strategy, KPMG International http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/conflict-minerals/Documents/conflict-minerals-beyond-part-one.pdf

[2] http://www.europarl.europa.eu/sides/getDoc.do?type=WQ&reference=P-2011-004340&language=EN

[3] Conflict Minerals-Does compliance really matter?, KPMG LLP http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/dodd-frank-series/Pages/conflict-minerals-does-compliance-really-matter.aspx

The public accounting of the origins of these materials is not only difficult, it is also unprecedented. It is thought that not many SEC-reporting companies knew their supply chain well enough when the Act was signed in July 2010 to be able to declare whether its products were "conflict-free." Since the Act became law, some companies have embarked on a voyage of discovery to find out where its materials come from. Rather like the Jules Verne classic "Journey to the Center of the Earth", this voyage is taking companies to the very core of their operations: their supply chains.

Few would disagree that the supply chain is a critical source of competitive advantage and is also a potential, strategic risk. A break in the supply chain can be enormously disruptive. By contrast, an efficient, strong supply chain can provide companies with an edge over its rivals. To run a lean operation, receiving components at the right time/price and avoiding excess inventory, are fundamental requisites of every modern manufacturer. They can require highly sophisticated computer systems to manage a global logistics operation. Information is, therefore, a critical part of supply-chain management, yet most companies do not have a deep insight into those chains.

After the Tsunami in Japan in 2011, most companies did not know how they were affected as they had little to no visibility into their supply chains. Companies with insight into their supply chain were able to move quickly to make alternate arrangements.

This may appear surprising at first sight, but it merely reflects the way the commercial world works. There are usually many tiers of suppliers, and integrated manufacturers deal directly only with the first tier. Supplier contracts are normally kept confidential and the reason is simple: vendors may not want to tell their customers where they get their supplies from for fear that the customer will go directly to their sources and circumvent them. Even if there is little danger of this, vendors fear that customers might find out the mark-up they charge and try to negotiate a lower price.

SEC-reporting companies must therefore overcome this reticence if they are to find out where their materials come from, as required by law. This report argues that, although it is not easy to achieve a more transparent supply chain, the benefits are great. It benefits not just investors and policy makers, but consumers who want to be reassured the products they buy are not fuelling a brutal conflict in central Africa. It will also benefit the SEC-reporting companies themselves – and their suppliers. More transparency means more data which can be transformed into a competitive advantage.

Mapping
the supply chain

Before SEC-reporting companies set up a compliance framework, they should first establish whether any of their products contain tin, tantalum, tungsten or gold. Nobody knows the extent of usage, but industry experts say there is a high probability that manufactured products – even plastic composites – contain them. "These metals are ubiquitous. The reality is that almost every company is going to touch these metals. It doesn't matter where you are in the supply chain, you will have a customer who is going to need to disclose to the SEC," says Bob Leet, Intel's industry lead of conflict minerals and co-lead of the extractives working group of the Electronic Industry Citizenship Coalition (EICC), an industry organization, and the Global e-Sustainability Initiative (GeSI), a non-profit organization that works with the electronics industry.

This first step is not easy, given the large number of products sold by most SEC-reporting companies. A good start would be to take a sample of products and interview the product groups, engineers, or procurement personnel to see of the products could contain 3TG. If a company does not know it already. As soon as a company determines that its products contain (or are likely to contain) one or more of the metals, it should set up the compliance framework, part of whose function may be to map the supply chain. The first KPMG report in this series on conflict minerals outlined what the framework should consist of. It is essentially a governance structure and a process to help ensure decisions are taken efficiently, at the appropriate level and with ultimate accountability to the Chief Executive Officer and the Board of Directors.

As Section 1502 stipulates, some declarations to the SEC regarding conflict minerals require an external audit. Since this compliance process is novel and complex, it is best to bring in the external auditor at an early stage.

The next step is the toughest and potentially the most rewarding: tracing where the minerals in their products originate and where (as well as how) they enter the supply chain. There are two ways to approach this and both should be explored. One is for a company to find out on its own where its metals come from. The other is to contact the relevant industry association for information about conflict minerals.

When a company begins to investigate its own supply chain, it may be preferable to start with a pilot program covering a narrow range of products rather than the entire set. Supply-chain specialists need to undertake a bill-of-material analysis or review Manufacturing Description Data Sheets of the product or products in the pilot program to find out what metals go into the products and where they come from. The engineers working with the materials in the manufacturing process may need to be interviewed to clarify the likelihood of occurrence of 3TG in their products.

This will enable companies to filter out perhaps a significant portion of first-tier suppliers that are SEC-reporting companies or ones publicly listed in other developed markets. These would be considered low-risk suppliers, as many would be reporting to the SEC and therefore have to comply with Section 1502. Others in developed economies are likely to have long-established compliance processes.

Suppliers that would be considered high risk would be those based in emerging markets where regulations are generally less stringent. Questionnaires should be sent to suppliers to find out whether any of the four metals are necessary to the functionality or production of the company's manufactured goods and, if so, whether they originate in the DRC or an adjoining country. The EICC-GeSI program has developed a questionnaire template[4] that can be used or adapted appropriately. It is in four languages, English, Chinese, Japanese and Korean.

A lot of information is likely to be gained from the questionnaire itself. Even a delay in answering the questionnaire or a non-response may be regarded as a sign that a supplier cannot or will not declare that it is conflict free.

The Organisation for Economic Co-operation and Development (OECD) has been developing a risk-based model in collaboration with companies, industry associations and eleven countries in central Africa. The model, called *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*,[5] consists of a detailed report with supplements focused specifically on gold and on tin, tantalum and tungsten. The report contains voluntary guidance on due diligence in the form of a five-step program that calls on companies to:

- Establish strong company management systems
- Identify and assess risks in the supply chain
- Design and implement a strategy to respond to identified risks
- Conduct an independent third-party audit of supply chain due diligence at identified points in the supply chain
- Report on supply-chain due diligence.

These are starting points, since the OECD does not provide detailed guidance on how to conduct due diligence. Nor is it tailored to the requirements of Section 1502. It is meant as a global guide.

[4] http://www.conflictfreesmelter.org/ConflictMineralsReportingTemplateDashboard.htm
[5] http://www.oecd.org/daf/internationalinvestment/guidelinesformultinationalenterprises/oecdduediligenceguidanceforresponsiblesupplychainsofmineralsfromconflict-affectedandhigh-riskareas.htm

Among the companies that have gone furthest with their due diligence is Intel. It asked its suppliers in 2009 – before the Act was passed – to complete a survey on the origin of minerals in their supply chain. It asked them:

- whether they had implemented a conflict-free sourcing policy
- whether they had the ability to trace the minerals used back to the mine of origin
- whether they could identify the smelters used to refine the minerals in their supply chain.

In a white paper published in May 2012,[6] Intel explains that the survey results demonstrated there was great variance in the amount of information suppliers knew about the minerals in their supply chains. Other companies that have undertaken surveys of their suppliers have had similar results. One reason for the lack of information is that first-tier suppliers do not know where their minerals come from. The minerals can pass through many links in the chain. Each link (ie, supplier) may only know about the company that sells directly to it.

Another reason is confidentiality: suppliers are reluctant to divulge commercially sensitive information, even (or especially) to powerful customers. But there are several ways to overcome this reticence:

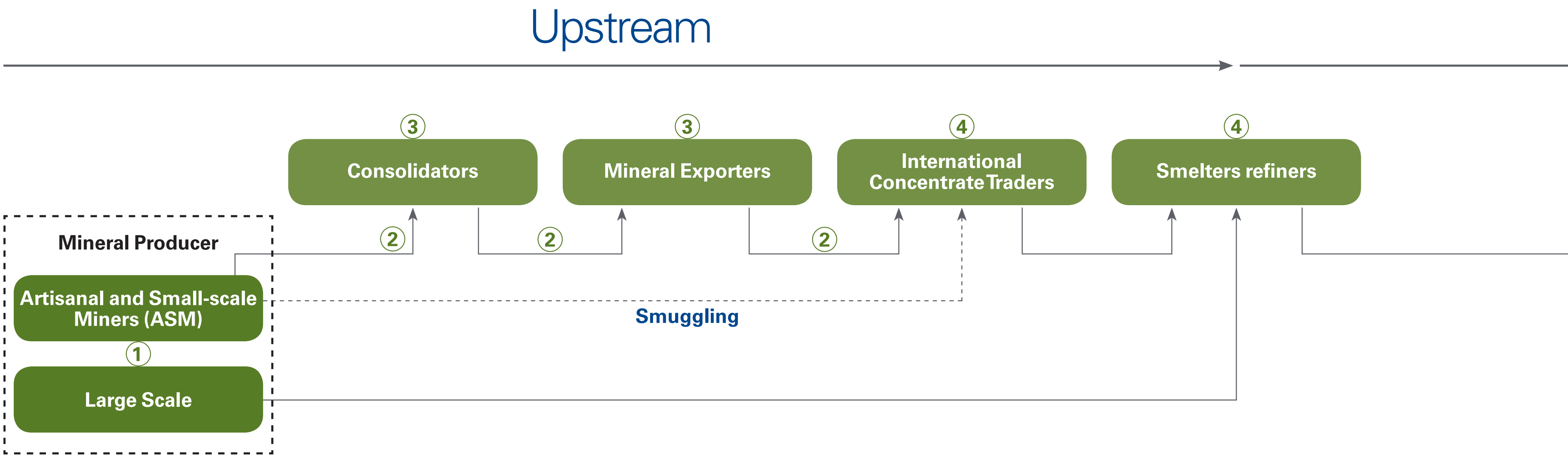
- Appoint a go-between that would extract from the supplier the necessary information on the origin of the minerals without giving away commercial secrets
- Negotiate directly with the supplier to receive just enough information about the names of smelters used to process the metals to be able to certify the minerals are conflict-free (or not), while stripping away commercially sensitive aspects, such as price and delivery terms
- Exchange information with upstream suppliers. In return for information from upstream suppliers with regard to the sourcing of materials, the downstream company may share data about demand for its products, thereby helping suppliers to design better production schedules.
- Include in contracts with suppliers a clause (called the flow-down clause) that they must divulge where they obtained their minerals from.

Whichever route is taken, the process of mapping the supply chain is likely to take a long time. Intel's May 2012 report said that in three years it had mapped more than 90 percent of its microprocessor-supporting supply chain, identified more than 130 smelters and conducted more than 50 smelter visits. It says it will produce the first microprocessor that is conflict-free for tantalum in 2012 and in the following year will make microprocessors fully validated as conflict-free for all four metals.

One important piece of data that Intel,[7] Apple[8] and HP[9] have unearthed is the large number of common suppliers they use. Intel publishes a list of the top 75 suppliers, representing

6 http://www.intel.com/content/dam/doc/policy/policy-conflict-minerals.pdf
7 http://csrreportbuilder.intel.com/PDFFiles/CSR_2011_Full-Report.pdf
8 https://www.apple.com/supplierresponsibility/pdf/Apple_Supplier_List_2011.pdf
9 http://www.hp.com/hpinfo/globalcitizenship/media/files/hp_suppliers_2011_gcr.pdf

Mineral Supply Chain Map



An ASM is a subsistence miner working independently, mining or panning for gold using his/her own resources. Large scale mining involves heavy equipment, high technology and a much bigger workforce.	Situated at a mine site or local market, collect minerals from ASM, conduct minimal processing of raw materials and transport to exporters.	Sell minerals received from consolidators to other markets in the world.	Crush and separate ore into valuable substances or waste by a variety of techniques.	Use heat and a chemical reducing agent to decompose the ore, driving off other elements as gasses or slag and leaving just the metal behind.

Risks:

1. Non-state armed groups or security forces may control the mines or extort money or minerals from miners. They may also get logistical support from the mines or abuse miners and their families.
2. Armed groups may extort money along the way.
3. Armed groups may extort money or minerals, or sell minerals to consolidators, exporters and other intermediaries.

Source: OECD

Downstream

5 Metal traders and exchanges	5 Component product manufacturers	5 OEMs	5 Retailers
Purchase and process large volumes of all grades of metal and ship to customers throughout the world.	Produce components for final product by utilizing the raw or semi-finished minerals.	Original equipment manufacturers make final products purchased and sold to/by another company.	Sellers who purchase manufactured goods directly from OEMs or from wholesalers.

4 Possible bribes to conceal or disguise the illicit origin of the minerals, transportation routes or chain of custody.

5 Possible non-existent or inadequate due diligence for a responsible supply chain of minerals from conflict-affected areas.

91 percent of its annual expenditure on production materials, capital and logistics. Apple's list is made up of 200 companies. HP's has 104. "Those lists look very similar," says Gary Niekerk, Director, Corporate Citizenship, who works in Intel's Office of Corporate Responsibility.

The concentration of suppliers tends to make the process of mapping the supply chain a little less daunting, at least to begin with. Intel has more than 10,000 suppliers in over 100 countries, but 75 of them comprise the vast majority of their procurement expenditure. If the pattern holds true in other companies, then it makes sense to focus on the core suppliers and gradually work out toward the periphery. Even so, progress is likely to be slow.

In Intel's case, the company decided to speed things up by going to the smelters. It was "clear to us that the most effective method to eliminate conflict minerals from the electronics supply chain was to implement a verification system with the smelters," Intel says in its white paper. Should a company follow Intel's example and contact the smelters? The first point of contact should be with the relevant industry association to check whether it has already done this. EICC and GeSI have set up a conflict-free smelter assessment program[10] in which an independent third party evaluates smelter and refiner procurement activities and determines if they have demonstrated that all the materials they processed originated from conflict-free sources. Electronics is not the only industry that has taken this initiative; help with compliance for association members in the U.S. is also provided by the Automotive Industry Action Group and the Aerospace Industries Association. Non-U.S. organizations, such as the Japanese Auto Parts Industries Association, have also become involved.

In addition, a number of commodity-based associations have taken the lead in helping companies to implement a conflict-free minerals program. These include the World Gold Council, representing mining companies, which has drafted assurance standards[11] for conflict-free gold. The London Bullion Market Association has issued responsible gold guidance for its Good Delivery Gold Refiners. The guidance is intended to provide a flexible framework for carrying out due diligence in this area and thus to minimize the cost of compliance for refiners, while ensuring that their feedstock remains conflict-free. The ITRI, which represents tin miners and smelters, has set up a supply chain initiative, iTSCI (ITRI Tin Supply Chain Initiative), to help upstream companies from mine to smelter conform with the OECD due diligence guidance.

One of the primary advantages for SEC-reporting companies in using a conflict-free smelter program to source their minerals is that, in theory, there is no risk of conflict minerals entering the supply chain downstream of the smelter. Some industry experts, however, allow for the possibility of recycled materials containing conflict minerals entering the supply chain and being combined with conflict-free smelted/refined products. All four commodities have a substantial recycling industry, and the SEC exempts recycled metals from reporting, but the likelihood of this occurring appears to be greater for gold than the base metals, probably because of gold's high price-to-weight ratio. Other analysts point out that gold refiners can operate on a smaller economical scale than smelters of the other commodities, so it may be easy, in theory, to combine conflict-free gold with gold from areas of conflict.

Tantalum, tin, tungsten and gold in Apple's supply chain

	Tantalum	Tin	Tungsten	Gold
Suppliers using metal in components of Apple products*	41	179	58	169
Smelters used by these Apple suppliers	15	58	38	87

*Many suppliers use more than one metal.
Source: Apple Supplier Responsibility: 2012 Progress Report

[10] http://www.conflictfreesmelter.org/cfshome.htm
[11] http://www.gold.org/about_gold/sustainability/conflict_free_standard/

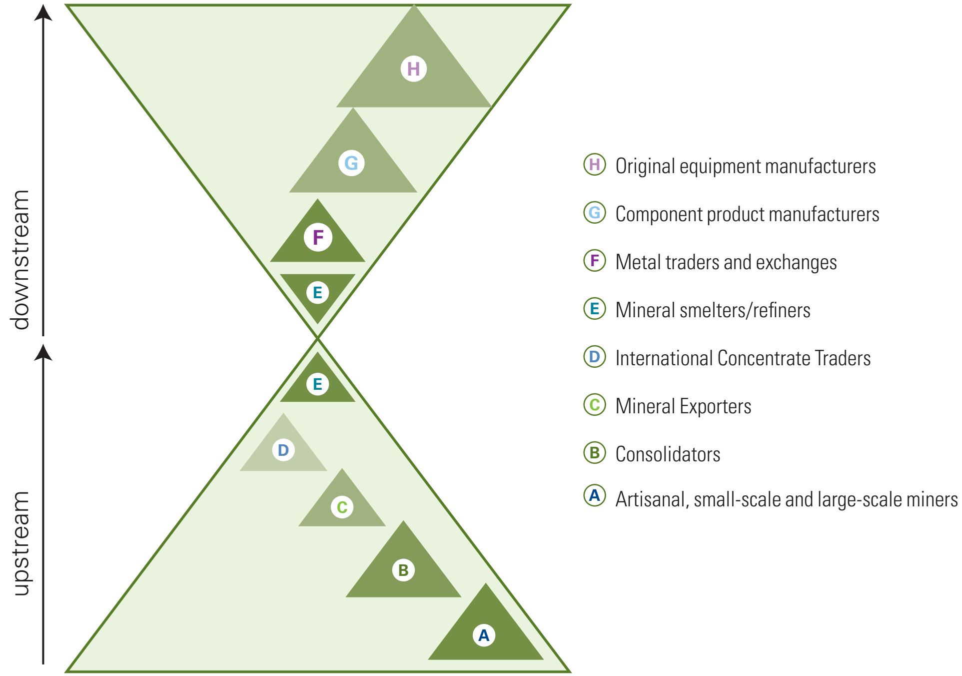
Another advantage of focusing on the relevant smelters is that there are only about 400 of them in the world, according to industry estimates, compared with hundreds of thousands of companies further downstream. Indeed, if the four metals were looked at in terms of the level of consolidation, the supply network from mine down to end user resembles an hour glass, with thousands of artisanal miners at one end supplying a few hundred smelters that then supply hundreds of thousands of intermediate metals fabricators and suppliers (see diagram). According to one analyst, there are fewer tantalum smelters than there are smelters for the other three metals.

One company that says it has "completely" mapped its supply chain is Apple. In its Apple Supplier Responsibility: 2012 Progress Report,[12] it says that it has identified 218 suppliers that use tantalum, tin, tungsten or gold to manufacturer components and the 175 smelters they source from. The table (see page 8) shows that there were only 15 tantalum smelters in Apple's supply chain, compared with 87 gold smelters/refiners.

Even though the smelter stage comprises the narrowest portion of the hour glass, 400 is still a large number and the process of certifying whether they are conflict-free is slow (see diagram on right). As of October 3, 2012, 62 smelter companies are going (or have gone) through the auditing process.[13] The audit has been completed on 26 companies and 18 have been declared to be compliant.

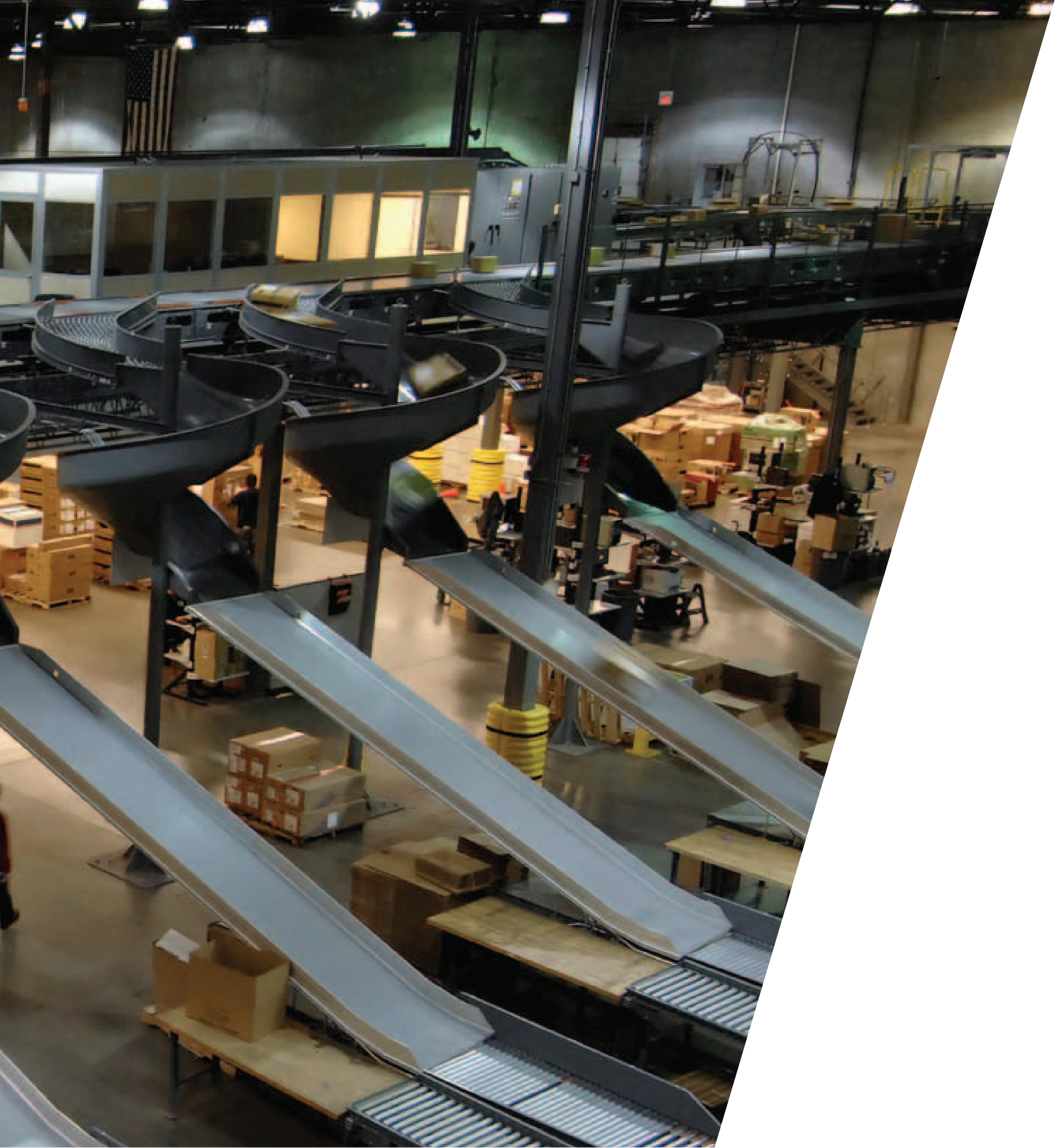
One supplier to the smelters is Mining Mineral Resources (MMR), a company based in Lubumbashi, in southern DRC. All tantalum, tin and tungsten ores prepared for export go through a ten-step process in which they are bagged and tagged and then combined in drums weighing up to 700 kg of ore. No less than seven organizations, including ITRI, play a role in checking the ores are conflict free. MMR has gone through several audits in the year to mid-2012 during the implementation of the first steps of the OECD due diligence guidelines, according to Shaida Abdul, head of compliance at MMR. The company's output is now part of a project sponsored by Solutions for Hope[14] to set up a "closed pipeline" of conflict-free tantalum ore.

Hour glass of mineral/metal supply chain



Source: "A critical analysis of the SEC and NAM economic impact modelas and the proposal of a third model in view of the implementation of Section 1502 of the 2010 Dodd-Frank Act" by Tulane University and the university law school's Payson Center.

[12] http://images.apple.com/supplierresponsibility/pdf/Apple_SR_2012_Progress_Report.pdf p11
[13] http://www.conflictfreesmelter.org/CFSindicators.htm
[14] http://solutions-network.org/site-solutionsforhope/fact-sheet/



Under this design, AVX Corporation, a manufacturer of electronic components takes ownership of the minerals on the western shore of Lake Tanganyika in the DRC. It is then shipped to F&X Electro-Materials, a certified, conflict-free smelter, in Guangdong, China. The material is converted into tantalum powder and wire which are then shipped to AVX's facility in the Czech Republic to be made into tantalum capacitors for computers and wireless phones.

Given the slow pace of declaring smelters conflict-free, some companies have gone beyond the smelters to map their supply chains from the downstream end as well as the upstream end. The SEC requires that companies complete a reasonable due diligence; whatever route a company takes, they should take care to develop an auditable approach.

Managing
the supply chain

A more transparent supply chain will help SEC-reporting companies to comply with the law. This is fundamental. But if the issue is regarded by companies solely as a matter of compliance, they will be missing an opportunity to make their supply chain more resilient and more efficient. The business benefits of compliance with Section 1502 may not emerge for a while. But KPMG argues strongly that companies may gain a competitive advantage by developing a compliance strategy, consisting of an organizational framework, a process of mapping the supply chain and auditing the result. Greater transparency leads to better management, based on better business data. "It's essential for the topic to be embraced as a means of business improvement," rather than merely a costly compliance exercise, says Lynton Richmond, Partner, Energy Natural Resources in KPMG's advisory services practice in London.

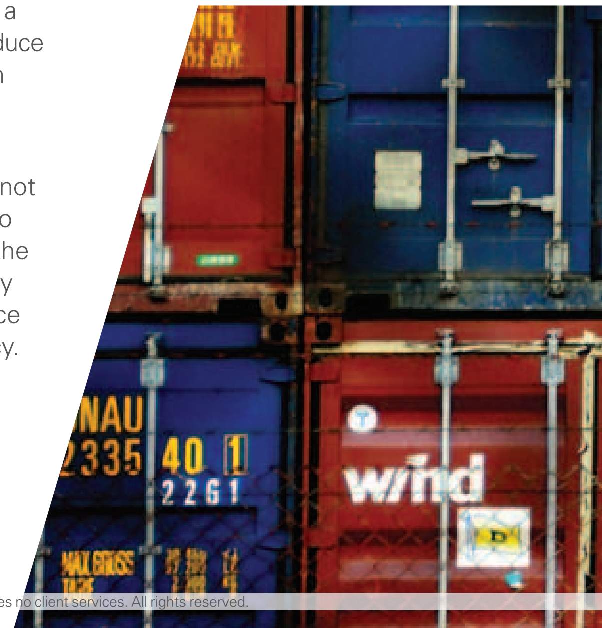
Optimizing the compliance strategy will be explored in the third report. In this second installment of the series, the benefits of better management of the supply chain will be dealt with briefly.

Managing risk

By now readers will be familiar with a host of business problems that have arisen due to inadequate management of supply chains. A volcanic eruption in Iceland[15] and a tsunami in Japan[16] are two examples of the ways in which supply chains can be disrupted by natural disasters. For many manufacturers, the risk of such disruption had not been properly factored into the management of the supply chain.

In the case of Section 1502, there is the risk of compliance failure and the consequent impact on a company's reputation, not to mention the liability provisions of Section 18 of the Exchange Act due to the filing requirement of Form SD. But there are other risks in the supply chain that may have been hidden and only brought to light by mapping the supply chain. One such is the possibility of over-dependence on a single, upstream supplier. Companies may find that a large number of, say, their tier-three suppliers buy their materials from the same source. Only a full mapping of the supply chain may reveal this risk. "If you don't know which parts of your supply chain are business critical, then you are in a weak position to decide whether you can afford to reduce inventory," says Brian Connell, Manager, Supply Chain Practice in KPMG's Global Advisory Services.

While a complete mapping of a company's supply chain is ideal, it is not required by the final rule. It is not going to be easy and suppliers may not be willing to divulge this information, but the more transparent the supply chain, the better for the company. At the very least, smelters need to be mapped to for compliance with the law and that is a start towards transparency.



15 http://www.worldtradewt100.com/blogs/14-wt100-blog/post/iceland-s-volcano-does-a-number-on-global-supply-chains
16 http://businesstheory.com/reducing-risk-automotive-supply-chain-2/

Promoting efficiency

There is a range of possible ways that a more transparent supply chain may lead to a leaner supply chain. Companies may, for example, find that they can save costs by reducing the number of suppliers – or by expanding it. They may discover that suppliers are taking needlessly circuitous routes to ship the products from one tier to another. Faster routes speed up the time to market as well as lowering transport costs. "Those cost benefits start to align with the procurement group to better purchase and take advantage of those situations. Economies of scale and leverage could definitely help, as could simplified processes and more streamlined operations. The benefits could be buying for a whole organization rather than doing so in siloes and consolidating resources for these activities. You can start to see how well you are managing your procurement practices," says Frank Monte, Managing Director, Strategy and Operations at KPMG's Global Advisory Services.

Strengthening governance

By demonstrating that a company's supply chain is conflict-free, it will reassure stakeholders that the company is compliant and will engender trust among suppliers, consumers and others. By working with its suppliers on compliance with the Act, companies will learn more about each other's ways of operating and will improve communications among them. A framework to comply with Section 1502 will also stand companies in good stead for other supply-chain-related laws and regulations, such as the US Foreign Corrupt Practices Act and the UK Bribery Act.

Lessons for the future

By now it should be clear that the regulatory tide is not going to recede. Consumers are becoming more aware of supply-chain issues. And non-governmental organizations (NGOs), with the help of social media, are making sure these matters stay on the public agenda. The Enough Project, one such NGO, publishes a ranking[17] of 24 large electronics companies on their efforts to avoid the use of conflict minerals in their products. Much of this attention, directly or indirectly, is communicated to lawmakers and regulators.

Conflict minerals may not be as prominent currently as other supply-chain-related issues, such as labor rights in emerging markets or oil leaks in the Gulf of Mexico. But clearly, some companies with the most valuable brands, such as Apple and Intel, see the need to protect their reputations by doing the right thing with regard to minerals from the DRC. It is only a matter of time before others follow suit. Better to be a leader than a follower.

[17] http://www.raisehopeforcongo.org/content/conflict-minerals-company-rankings

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