

MIT Supply Chain 2020™



SC2020 Baseline Scenarios

Note: These scenarios are motivated by the concepts and ideas presented in “Shell Global Scenarios to 2025” by Shell International Limited

Synchronicity

Snapshot

Democratic ideals have taken hold across the globe, and intrinsic to these ideals is the notion that all parties – whether they be individuals, companies or governments – must trust each other. In this world, trust does not impede business or societal relationships - it promotes them. As a result, untrammelled global commerce flourishes in Synchronicity world, to such an extent, that a major challenge for companies is keeping up with constantly shifting market demands and technological breakthroughs. Qualities such as trustworthiness and integrity are essential to business success. Life is rich but frenetic, and people like to sample as much of it as they can. They change jobs frequently, another challenge for companies that increasingly rely on “knowledge workers” to create the customized products and services that are in demand. Environmental protection has become universal aspiration.

Detailed Description

Globalization, underpinned by the growth in democracy, has redefined the world map. Democratic governments have taken root in most countries, although they are still in their infancy in Latin America and Russia. The Middle East remains an area of uncertainty, but even here the notion of spreading democracy is no longer summarily dismissed as a Western plot to wrest power from Arab nations. All countries are prepared to enter into meaningful debate to reach a consensus on important issues.

With this strong culture of democracy as a foundation, the advance of market globalization has been swift, and trade barriers between companies and countries have crumbled. The concept of free trade permeates regulatory codes, regional development policies and aid programs. Trust is not simply a desirable asset, but a pre-requisite for doing business between companies and governments, and with consumers.

But this is by no means a laissez-faire world devoid of conflict or stress. Companies must have a reputation for being trustworthy to remain viable. Integrity is a business imperative. In addition to offering products and services that fulfill the promise of high quality and reliability, companies are expected to empower shareholders to take an active role in businesses. Enterprises must have a clear corporate mission and firm values to retain employees and maintain a favorable market identity. Citizens actively campaign for a better quality of life, forcing governments and enterprises to aim high when formulating standards in key areas such as the environment, healthcare and safety. The media, itself under constant scrutiny from a discerning public, holds organizations and individuals accountable for their actions.

World financial markets are almost fully integrated. Short-termism is no longer an impediment to business planning. Investors seek to maximize value over the long term, and are prepared to give companies adequate time to re-structure and to strategize. Again, however, there is no room for complacency. Investors still demand increased profitability and improved capital productivity, and attach great importance to high ethical standards and social responsibility in the corporate world.

Given these imperatives and the prevailing culture of trust, companies are far more likely to enter into joint ventures and consortia in the Synchronicity world. Partnering and virtual teams are

common. In this open environment the “value web”, where entities work together to achieve commercial success, can reach its full potential. Co-production is a popular strategy for maximizing value. As a result, there are more opportunities for new entrants – including small- and medium-sized enterprises – providing they can establish the right connections.

Information and knowledge move quickly around the globe in standardized formats, giving markets more uniformity. This intensifies competition since consumers demand new products and services to be available almost as fast as they are communicated. Running a company is a perpetual race to keep up with the latest fashions and technological advances. Products become obsolete very quickly, putting market leadership positions under constant threat. Customization has almost become the price of entry into markets. Companies have to be resourceful to remain competitive in important areas such as choosing which raw materials to use. And they have to be extremely innovative and creative, particularly when integrating technology into their businesses to drive down supply chain costs while maintaining the quality of customer service. This is a never-ending process since technologies are constantly being refined and replaced by “new, improved” versions.

People in this world are remarkably mobile as a result of relaxed regulations on cross border movements of products, information, and people. The free flow of migrants has balanced the effects of unequal population ageing but it has increased the diversity in the population mix as well. The global distribution and diversity of highly competitive production resources, including skilled workforce, are influencing supply chain design decisions. Furthermore, companies have reconciled to the fact that they will receive only partial loyalty from employees.

The idea that a company’s most precious resource is its workforce has been given new currency in the Synchronicity world. The services associated with a product are as important as the product itself. Most leading companies consider software element of the products to be its main competitive advantage, and the only way to retain that edge is to retain the employees who created it. At the same time workforces and companies have become more distributed, because frameworks exist that make operating across multiple jurisdictions just as cost-effective as operating across a single jurisdiction.

There is a global consensus on environmental stewardship. A Global Environmental Mechanism has been created that serves as a clearing house for data, technologies and policies pertaining to the replenishment and conservation of scarce natural resources. The Mechanism is a ready source of effective practices in areas such as pollution control and the management of natural resources. As a result, embedding environmental factors into pricing strategies becomes a norm. However, since open markets and free trade are seen as essential to achieving security of supply, the allocation of resources is invariably left to market forces, and weighty energy decisions tend not to address long-term issues. The price of oil is volatile and relatively high; although in overall terms fuel is more affordable since citizens of the Synchronicity world are prosperous.

Alien Nations

Snapshot

Citizens of the Alien Nations world think and act locally. Foreign peoples and governments are mistrusted or even disdained; globalization does not even warrant lip service from a political establishment hemmed in by nationalism. Energy is a hot-button issue because countries are in competition for dwindling natural resources. Conservation and energy efficiency policies are being pursued with vigor. The lack of standardization across global trading and commercial systems makes international expansion risky and expensive. Trade barriers are strewn across the world. Not surprisingly, companies focus their endeavors on national markets and customers. A major threat to world stability is unsynchronized business cycles and investment strategies, a symptom of the lack of global unity. Nationalistic attitudes obstruct emigration, even though there is a high demand for younger migrant workers in many countries. In the Alien Nations world charity begins - and ends – at home.

Detailed Description

Nationalism dominates the Alien Nations world. Economic, commercial and political self-interest is not a sub-text but the main plot for all countries. Citizens see the world through the prism of their own prejudices and values, and this is reflected in respective political systems. Such introspection inevitably breeds fear as each nation strives to assert and promote its own national agenda. International trade receives short shrift from governments and citizens alike, unless it confers some decisive national advantage. As a result, globalization is severely undercut in this divided world. It occurs haphazardly, and only when companies are able to navigate through the complex arrays of laws and regulations that fence off nations from each other. In short, trade barriers, both implicit and explicit, impede the flow of goods.

In such a compartmentalized world countries compete fiercely for natural resources. Citizens expect their governments to secure sources of energy that are reliable and cheap, regardless of the global implications. Domestic energy security and employment policies always take precedence over global ones. The price of oil follows a “long wave” cycle alternating between high and low volatility phases. But at least this preoccupation over the national share of non-renewable resources focuses attention on energy issues. Governments are actively pursuing policies to find alternatives to fossil fuels such as hydrogen. Energy efficiency has moved beyond political rhetoric and is now a real goal that commands serious attention. Recycling, remanufacturing and waste management are regulated rigorously.

The retreat into nationalism poses some unique challenges for companies. As countries have come to view their neighbors with growing suspicion, they have become fixated on the threat of terrorism and war. These fears are stoked by lurid stories of plots and counter-plots in the media. Governments have reacted by introducing more stringent regulations to protect citizens and the national interest, particularly in the safety area. This has made it almost impossible to develop international safety standards for products. Indeed, safety/security regulation is often used as a convenient guise for protectionism. Environmental standards are frequently deployed in a similar fashion. Consequently, efforts to address global problems such as climate change have collapsed as an increasing number of countries have chosen to adopt the “free-riding” stance of the United

States, and pulled back their commitments from the collective international stage. Policy debates are centered on local air and water pollution issues, in much the same way as in the U.S. today.

Companies have no option but to shoulder high compliance costs and non-tariff trade barriers. The lack of standardization frustrates globalization. Foreign companies have to work harder to compete, and may be pitted against national champions. It is difficult to leverage synergies across international operations or take advantage of economies of scale since companies must juggle competing sets of risks and opportunities in different countries. Given these obstacles, enterprises have shifted their sights to domestic customers, leading to a geographic concentration of markets. There is much emphasis on customization, as graying consumers demand personalized products (see demographic trends below). However, competition is fierce even in this myopic world, and controlling supply chain costs is a high priority for companies large and small. To this end, new technology is being used to achieve substantial operational savings.

Perhaps the biggest economic threat is the lack of synchronization between business cycles, as the world's economic powers pursue individualistic growth strategies. An ill-defined and inefficient architecture for international finance is not conducive to effective coordination between national authorities or markets. Investors are naturally skeptical about global markets – they need to be enticed by high premiums to overcome their bias towards domestic investments. This amorphous trading system opens up opportunities for global arbitrage, not just in the financial community, but also through the operations of multinational corporations, as risk profiles vary widely across countries and institutions.

Furthermore, disparate national rules and standards, protectionist measures, and security concerns, restrict the global mobility of migrants. Governments ensure that foreign workers return to their homelands when their allotted time in the country comes to an end. These restrictions make it difficult for countries to replace aging indigenous employees with younger, migrant workers, widening the demographic gaps between countries. So-called 'knowledge' workers are highly prized but foreign workers are viewed with deep suspicion, and immigration is an extremely emotive issue that frequently boils over into violent conflict. Countries that are the main sources of migrant workers resent these attitudes, further deepening the ideological divides that separate countries.

Spin City

Snapshot

Trust and national security issues dominate political and corporate agendas. Globalization remains a powerful force, but hamstrung by a complex web of conflicting regulations. Governments are intervening more and more to strengthen security and paying less attention to their markets in an increasingly complex trading environment. As a result, markets are not as efficient as they could be, and managing change is a major challenge since the ground rules for trade are in a constant state of flux. Trust is a distinct competitive advantage. To compete globally, companies have to build solid reputations for being trustworthy. Highly innovative enterprises that can exploit the new, but fleeting, business opportunities around the globe that are a feature of this fast-changing world are also in a strong competitive position. The conflict at the heart of this world is: should regulation or market forces champion trust and physical security?

Detailed Description

In the Spin City world globalization is driving economic growth but at a slow and uneven pace. Government regulation reins in the global expansion of business. A lack of trust discourages the kind of openness that is essential for unfettered international trade to flourish. And although the merits of globalization are recognized and even lauded, in this climate of suspicion a hybrid form of world commerce has emerged that combines respect for market forces with a high level of state intervention. For example, the Internet functions much like international airspace. It is a universal communications medium but divided into a patchwork of jurisdictions as each country controls the traffic that flows within its sovereign space (think of the influence that China exerts over Internet traffic within its borders today, and imagine that system extended across the globe).

At a government level national security is a top priority. It could be argued that this is the case today, particularly in the United States, but in the Spin City world governments have become obsessive to the point where securing business transactions through regulation colors every decision and policy. Security issues and mistrust frame all geopolitical discussions. Governments have decided that markets are incapable of maintaining an adequate level of security and financial trust, and therefore must be scrutinized and regulated by state agencies.

However, not every nation is governed by the same iron hand. Managing the issue of trust differs from country to country. For example, countries that have a long tradition of state intervention such as Russia, China and Venezuela, reinforce the regulatory systems that were already in place without appearing anachronistic. In countries where state agencies have been less interventionist, Australia and the United States for instance, there is more emphasis on using private sector organizations such as accountants and audit firms to enforce regulation.

Despite these differences world issues are internationally addressed; supranational organizations and treaties such as the European Union, NAFTA and the United Nations remain important. Still, the fundamental lack of trust almost always frustrates consensus on a global level.

The lack of consensus extends to environmental regulation as well. The state of the environment and the non-stop depletion of natural resources, are major concerns. Various campaign groups including NGOs pressure governments and companies to promote sustainable development and

more transparency in the use of natural resources. The Kyoto Protocol is still in force albeit in a stagnant form. But governments' natural response is to impose mandatory controls to protect the environment, mainly in the form of taxation. Recycling, remanufacturing and waste management activities are heavily regulated. Energy markets are governed by complex rules and regulations that aim to foster competition, secure energy supplies and protect end-customers. Oil is more expensive in real terms than in any other world scenario, and although alternatives fuels have been developed, the inefficiencies created by government intervention tend to inflate the cost of energy.

Companies have adapted to this uncertain and complex environment. In fact, on a macro level, there is competition between governments to develop regulatory systems that fulfill national security objectives while attracting private sector organizations. As a result, these systems are constantly changing, and companies devote a great deal of time and effort to monitoring the changes and re-assessing the competitive landscape. On a micro level, the lack of trust in this world shapes the way enterprises do business. Profitability and capital productivity are still fundamental metrics. The media still thrives on stories about corporate profits and scandal, and publishes rankings that keep companies under pressure to perform. But investments are also driven by companies' ability to inspire trust. In a world where trust is at a premium, those enterprises that establish a reputation for being trustworthy have a distinct competitive advantage. Enterprises that show a willingness to comply with regulations or even go beyond the call of duty also have an edge over less savvy competitors.

Research and development is crucially important. The tangle of regulation that ensnares the commercial sector makes supply chains less efficient and introduces more cost. A way to counter this is to use superior technology to increase productivity and speed up information flows. There is more collaboration between governments, research establishments and companies, and R&D budgets are less prone to cuts. Even so, technical excellence is not an easy target to hit. In the prevailing climate of suspicion the diffusion of ideas is slow, particularly when it comes to the transference of ideas and technology across borders. There are legal tools available to protect intellectual property, but these seldom afford full protection from unscrupulous government agencies and competitors. As a result, the sharing of intellectual property with companies across borders is frowned upon. In short, creativity and innovation are curtailed.

Mistrust also stymies the movement of people. Migration is restricted – ostensibly for national security reasons. As the flow of migrants is discouraged, it is difficult for countries to replenish their aging work forces with these workers. This has created demographic imbalances. In countries such as Germany, Italy and Japan, where the average age of the citizenry is relatively high, the easy availability of younger migrants is particularly troublesome. But even in comparatively young countries such as the United States, the limited number of immigrants is causing serious problems. Populations are graying, and a major issue is how to retain the knowledge base as older, experienced workers leave the workplace. These imbalances cause tensions between countries, feeding the mistrust that already exists. Ironically, restricting migration in the interests of national security has led to even more regulation. In an effort to address the imbalances described above, governments have introduced convoluted regulations designed to admit migrant workers in specific circumstances.