



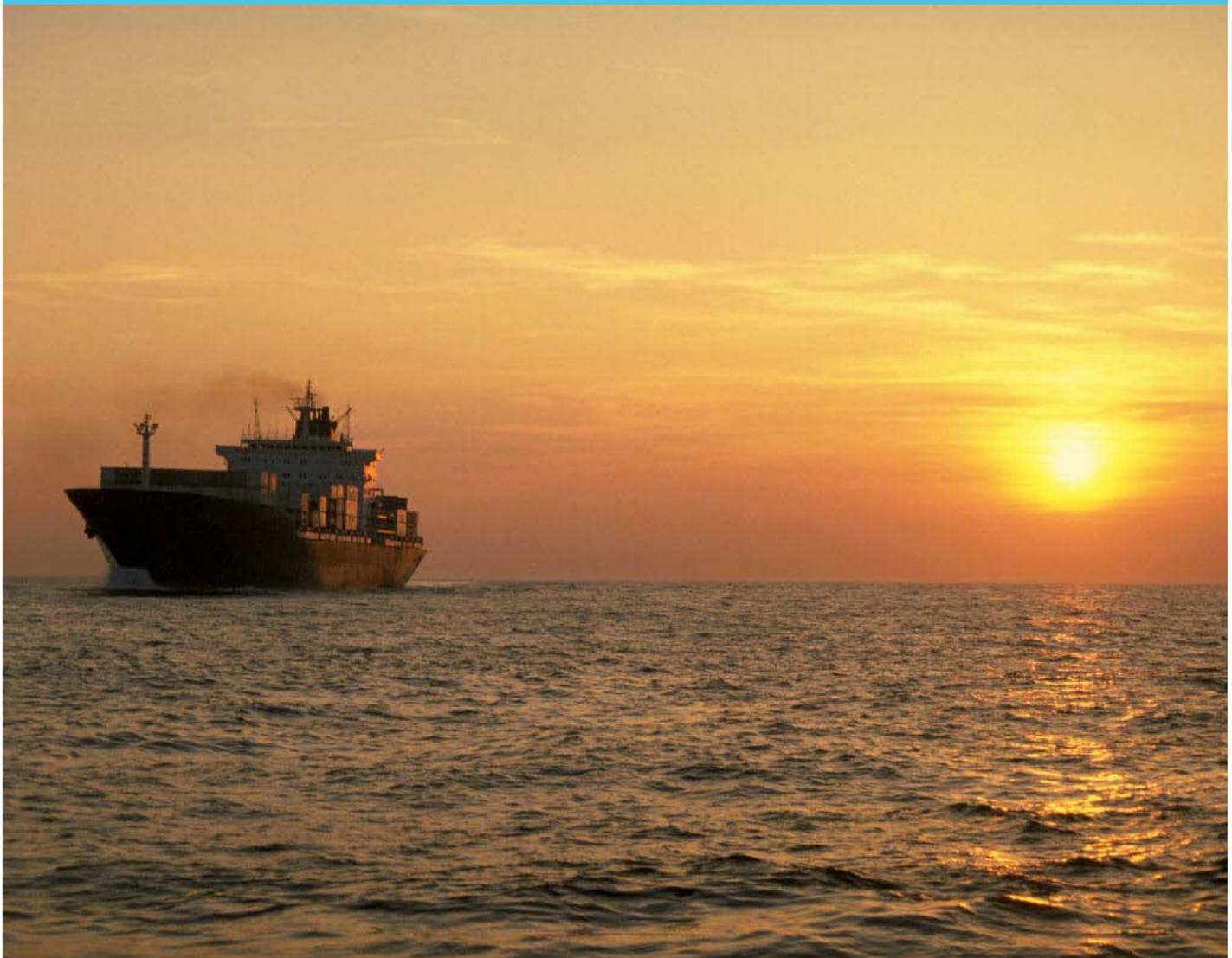
Sustainability Trends in the Container Shipping Industry

A Future Trends Research Summary

Peder Michael Pruzan-Jorgensen, Managing Director, Europe, Middle East, and Africa, BSR

Angie Farrag, Manager, Advisory Services, BSR

September 2010



Contents

Report Attribution

This report is the result of extensive research conducted by BSR and Maersk Line as input for Maersk Line's 2015 sustainability strategy.

The report represents BSR's perspective of major trends in the container shipping line industry based on engagement with various industry stakeholders including major customers, regulators, and NGOs, as well as the proprietary future trends research conducted by BSR.

The viewpoints expressed in this report are solely those of BSR.

BSR would like to thank all the interviewees for their time and knowledge shared.

Executive Summary	3
Sustainability Trends	5
i. The Sustainability Topic Categories	6
» <i>Environment</i>	
» <i>Health & Safety</i>	
» <i>Business Ethics</i>	
» <i>Social Responsibility</i>	
» <i>Security</i>	
ii. Future Trends Shaping the Business Environment	11
» <i>Hyper-Transparency</i>	
» <i>Regulated carbon and resource constraints</i>	
» <i>Rise of rights and local governance</i>	
» <i>Socio-Economic changes</i>	
iii. Customers Seeking Different Value Propositions	15
Implications for Container Shipping Companies	16



This report provides a snapshot summary of the key sustainability trends in the container shipping industry and how they are likely to affect the industry. In addition, the report takes a closer look at customer expectations and four societal mega-trends that are likely to play a growing role in shaping the industry's response to sustainability.

The report does not seek to provide a comprehensive overview of all significant regulatory and non-regulatory changes shaping the container shipping industry but rather attempts to offer an analytical perspective on how the industry's approach to sustainability must and will change in the coming five to seven years.

Executive Summary

The international container shipping industry has entered new waters. Despite still being the most environmentally sustainable transport mode for bulk cargo¹, the industry now is succumbing to a host of social and environmental regulations and stakeholder expectations that will force changes in the competition. While some carriers will resist these changes, others will embrace them to develop more compelling value propositions.

In the next five to seven years, market, stakeholder, customer, and regulatory pressures related to sustainability will drive significant changes in the way international container shipping lines operate and do business. Considering that the industry transports more than one-third of the value of global trade, provides more than 4.2 million jobs², and represents a heavy social and environmental footprint, these are developments that will have far-reaching impact in a variety of sectors.

Environmentally motivated regulations are likely to become the most important cost-driver in the coming years, as governments and corporations raise the bar on air emissions, ballast water discharge, ship design, and ship recycling. Similarly, regulatory changes related to security, business ethics, health and safety, and labor standards will put additional pressure on international container shipping lines to increase sustainability performance.

All of these micro-level changes likely will be compounded by four wider societal mega-trends: hyper-transparency, regulated carbon and resource constraints, rise of rights and local governance, and socio-economic shifts. Our research suggests these mega-trends will present the industry with additional challenges such as greater expectations to control what goes inside the 'box' as well as increased pressures to switch to low-sulfur fuels. While current environmental regulatory changes are wide-ranging and will have a significant impact on the industry, we are convinced that further changes will come in the coming years.

The rise of sustainability to the top of the management agenda is happening at a time when customer demands for greater reliability, agility, and lower costs already are exerting pressure on the industry's operating model. Customers and stakeholders are adding improved sustainability performance to the mix of expectations for their supply chain logistics providers. Indeed, we are seeing that in the years ahead, some customers will want to look to transportation companies as strategic innovation partners instead of simply service providers, thereby forcing greater differentiation in the industry.

¹ Shipping has been shown, in general, to be an energy-efficient means of transportation compared to other modes. However, not all forms of shipping are more efficient than all other forms of transport. IMO 2009

² World Shipping Council, 2009

Until recently the industry has chosen to take a defensive approach to sustainability; many companies have sought cover under the claim that sea transportation is inherently sustainable. This is no longer a viable strategy for carriers that seek to service the world's largest companies—organizations that increasingly see sustainability as critical to their business. While most major carriers have adopted sustainability-oriented measures such as slow steaming, scrubbers, retrofitting, and new designs, few, if any, of these companies have taken a strategic approach.

Looking ahead, we believe superior sustainability performance could become one of the differentiating and value-adding factors in an industry where companies historically have struggled with presenting a unique value proposition beyond cost competitiveness.

We believe such strategies must consider:

- » **Showing year-on-year Performance Improvement:** Reporting continuous improvement in baseline social and environmental performance, including energy efficiency, will be critical to validating sustainability credentials.
- » **Tactical Investments:** Incorporating robust and integrated management systems, clean technology and effective employee training programs to sustain long term performance improvements.
- » **Innovation:** Developing new “green” solutions and services for customers who seek to mitigate their own sustainability footprints.
- » **Sustainability Risk Management:** Mitigating sustainability risks throughout the supply chain to offer customers a complete, door-to-door solution.
- » **Redefining Value:** and proactively identifying opportunities for value creation, beyond low cost service delivery.
- » **Collaboration:** Partnering with stakeholders throughout the supply chain (including local communities) to generate socioeconomic and environmental benefits.

There is no question that environment – particularly carbon and sulfur dioxides – will continue to pose the greatest set of risks and opportunities for global container shipping, due to both the significance of the environmental impacts and the potential role of container shipping lines in optimizing global supply chains for its customers. As in other industries, green strategies are also about seizing opportunities and creating value for customers, shareholders and other stakeholders.

However, our research also shows that other areas increasingly will require a more strategic approach to ensure the effective and efficient management of risks and opportunities.

Sustainability Trends

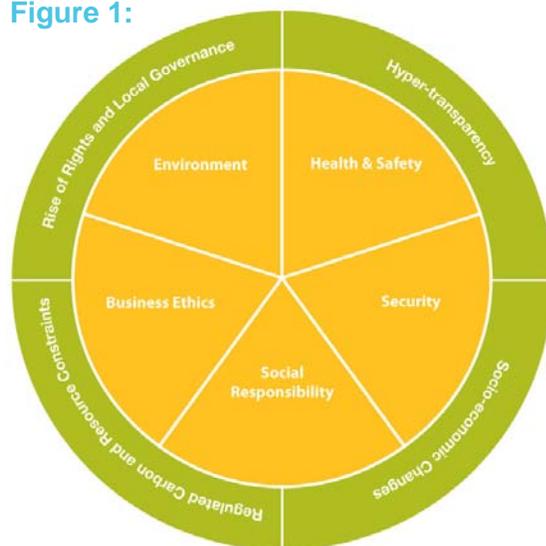
The international container shipping industry has an enormous economic footprint. All told, the industry transports more than one-third of the value of global trade, and provides more than 4.2 million jobs. Seaborne trade has grown with the world economy - at any given point, the largest shipping lines transport more than 3 percent of the globe's gross national product³. And because shipping routes play a huge role in the regional growth and the development of today's complex supply chains, the industry's economic reach is even greater.

This economic footprint comes with a heavy environmental footprint, as well. The biggest environmental impacts are felt in the air and water. Carbon emissions from shipping alone are estimated at 3 to 4 percent of global carbon emissions⁴. While environment presents the biggest risks and opportunities for international container shipping companies, the industry also faces significant issues related to security, health and safety, business ethics, and social responsibility.

These challenges are varied. The industry's role as a global connector and facilitator of trade means it has a meaningful and often significant influence over which producers can attain access to different markets. International container shipping companies also deal with issues of legality; because both legal and illegal products are transported through the industry's networks, companies find themselves under the same kind of pressure that telecommunication services providers have experienced for transmitting content they can't control. A third problem: Because container shipping companies operate in a number of global markets with no or limited enforcement of the rule of law, they are regularly exposed to human rights risks and unethical business practices.

The sustainability challenges are therefore categorized into five major topic areas: Environment, Health and Safety, Security, Social Responsibility, and Business Ethics. Whilst our research shows that these areas bring their own unique set of risks and opportunities for companies to manage, we also find that the evolution of the sustainability challenges within the industry are far from being immune to wider societal changes occurring, and are in many ways a direct function of such mega-trends.

Figure 1:



Our research suggests that four mega-trends will exercise an important influence on the industry:

- » Hyper-transparency
- » Rise of rights and local governance
- » Regulated carbon and resource constraints
- » Socio-economic changes

While other mega-trends are likely also to yield influence, the above four trends must be taken into account as companies look to develop strategies for the future.

³ World Shipping Council, 2009; IMO, 2009

⁴ Oceana, 2008

i. The Sustainability Topic Categories

The following section presents a summary of the output from extensive review of stakeholder and market expectations, and regulatory changes on the horizon, across the identified sustainability topic categories relevant for the international container shipping industry:

ENVIRONMENT

Protecting the environment is, by far, the biggest sustainability challenge for international container shipping companies today. Most of the issues here relate to emissions. Currently, the focus is on greenhouse gas (GHG) emissions. Looking forward, there also are strong signals that sulfur oxide (SOx), Nitrogen oxide (NOx), Particulate Matter (PM) and black carbon will receive greater attention due to the significant human health and local environmental impacts. Here are some of the facts:

- » The industry's total carbon dioxide (CO₂) emissions comprise between 3 and 4 percent of global emissions--higher than the total emissions of the nation of Germany⁵. No global regulatory scheme exists today, however this must be expected in the coming years.
- » By some estimates, annual Particulate Matter (PM) and sulfur oxide (SOx) emissions from the shipping industry contribute to the premature deaths of more than 60,000 people globally⁶. They also contribute to millions of peoples' respiratory problems, specifically those living close to congested ports. Bunker fuel, (low grade heavy fuel oil used to power a ship), is the major reason for these emissions. The International Maritime Organization (IMO), the global body that regulates the industry has set out to take the sulfur content down to 3.5 percent from 4.5 percent by 2012 and further down to 0.5 percent by 2020; by comparison, long-haul trucks in the United States only are allowed to use fuel with a sulfur content of 0.015 percent⁷.
- » Nitrogen-oxide (NOx) contributes to a wide variety of health and environmental problems, including respiratory issues and ground-level ozone or smog. The IMO has also set out to bring down the NOx from shipping.
- » Black carbon is widely considered a particularly harmful substance that potentially may be the second largest contributor to global warming after CO₂. Because problems stemming from black carbon are concentrated in environmentally sensitive areas such as Arctic regions, the opening up of northern shipping routes may have a serious negative impact on climate change. The IMO will review a proposal on the need for reducing black carbon emissions from shipping in this region⁸ at the sixty-first Marine Environment Protection Committee meeting in September 2010.

The impact of ballast water is another key area of environmental concern. Ocean carriers and other large ships use significant quantities of ballast water to help with buoyancy. The water is collected in the coastal waters of one region and discharged at the next port of call. Since ballast water contains biological materials, there is a risk that invasive species are introduced in new ecosystems

The Cost of SOx on Human Health

The United States Environmental Protection Agency (EPA) recently announced that new regulatory SOx standards that soon will take effect are expected to prevent 12,000-31,000 premature deaths and 1.4 million lost workdays, and result in annual health benefits in 2030 of \$110-270 billion, nearly 90 times the projected costs of \$3.1 billion to achieve those results.

Source: US EPA 2010.

⁵ If the shipping industry were a country, its total GHG emissions rank it as the sixth largest emitter. Oceana, 2008

⁶ Environmental Science and Technology, 2007

⁷ DC Bureau, 2009

⁸ SustainableShipping News Desk, 2010

with considerable environmental and economic costs. New IMO regulation will soon enter into force that will reduce the risk significantly⁹.

Across the board, compliance with new IMO emissions regulations will present significant expenses for international container shipping companies. The major industry players have accepted these changes despite operating costs increases of 25 to 40 percent¹⁰. Other supply chain partners, such as ports and terminal operators, complain that new emissions regulations will weaken their competitiveness.

Over the next five to seven years we can expect to see:

Navigating Regulation

'An inherently global industry like shipping should be regulated globally: a system based on regional or national regimes could skew competition and encourage capital and carbon flight. Shipping leaders need to engage creatively with policymakers to help craft regulation that supports forward-leaning industry structures and makes optimal use of its capabilities'.

Source: Xyntéo, 2010

Regulatory developments	Stakeholder perspectives
<ul style="list-style-type: none"> » Industry specific carbon tax or cap and trade. » IMO to consider stricter regulations on SOx and NOx, beyond those already adopted. » New regulations on black carbon, PM and waste. » Continued patchwork of local regulations, standards and voluntary schemes (e.g. California Low Carbon Fuel Standard). » Additional US ECA zones likely. » Asia expected to step up on emissions regulations, motivated by local health concerns. 	<ul style="list-style-type: none"> » Local and regional stakeholder pressure toward the industry over environmental impacts increasing. » Mounting attention to health and local environmental impacts associated with particulate matter, black carbon, SOx, and NOx. » Increased concern over water discharge and health of our oceans. » Increased attention on vessel recycling.

As global GHG, SOx, and NOx emission regulations kick in over the coming years, environmental performance as a source of differentiation and competitiveness will require more innovative and ambitious initiatives aimed at offering value to customers through new solutions and services. A cursory look at public announcements of major shipping lines such as NYK, Maersk Line, MSC, and CMA CGM indicates that all of the companies have made significant carbon commitments already. Because such robust performance is becoming an entry requirement for businesses (and supply chain partners), the greatest potential appears to lie in the possibility for offering customers value-added solutions and services that contribute to optimizing their sustainability profiles.

⁹ IMO, 2009

¹⁰ European Community Shipowners Association

Quantifying a Safety Culture

'Estimates for the total costs of all categories for all vessels involved in marine incidents annually range between US\$581 million to US\$1 billion. Conversely, high quality safety management yields cost savings annually for industry of between US\$500 million and US\$1 billion annually (USCG, 1997).'

'True cost accounting translates to a better bottom line.'

Source: Ornitz, 2001.

Implementing a Culture Shift

'Top management must be seen to be engaged to build a real safety culture – after all, *'employees respect what management inspects.'*

HEALTH AND SAFETY

In the next five to seven years, health and safety will remain an area that requires management oversight similar to the focused attention paid by the tanker industry in the previous decades. The need for this oversight is paramount; evidence suggests that safety performance has stagnated and in some cases worsened. Case in point: Ships now are twice as likely to be involved in collisions or groundings compared to just five years ago¹¹.

A number of inter-related factors have been linked to the frequency of serious accidents. Human error is a key issue, and it is on the rise due to an increasing undersupply of skilled crew worldwide—combined with more technical equipment, that has increased the complexity of operations. On top of this, higher commercial pressures resulting in increased workloads compound the problems.

The global economic crisis is also cited as a key factor affecting shipping safety performance, as the agenda shifts to cost cutting initiatives. Stakeholders urge companies to maintain proper risk management and consequence analysis toward safe and secure operations at all times, to ensure that saving money in short term does not result in longer term serious safety impacts, which can cost significantly more to the business in both revenue and reputation terms.

Meanwhile the health agenda is predicted to gain increased attention. In the quest for retaining top talent, of both on and off-shore staff, companies that seek to address the well being agenda of their employees will be favored. In addition to signs that the skill level of crew is decreasing, there is also evidence that young people at maritime universities are increasingly choosing to stay land-side, citing well being and safety as key concerns.

The principal regulatory mechanism driving future health and safety standards is the Maritime Labor Convention (MLC). Regulations stemming from this legal framework focus on a stricter and a more holistic approach to health and safety. These new regulations extend well beyond the requirements of the International Safety Management (ISM) code and will be an auditable certification requirement for vessels to trade. Specific areas of the MLC relevant to health and safety include hours of work or rest, manning levels, on-board accommodations, on board medical care, and on-board complaint procedures.

Over the next five to seven years we can expect to see:

Regulatory developments	Stakeholder perspectives
<ul style="list-style-type: none">» Gradual alignment and implementation of the MLC.» Update of on- and off-shore regulations to higher standards with potentially increased bureaucratic burdens.» Performance improvements coming from the inside, i.e. implementation of current standards and practices by top management and employees.	<ul style="list-style-type: none">» Attention to embedding expanded safety culture that incorporates appropriate training, consequence analysis and leading indicators.» The wellbeing agenda will become critical to retain top talent.» Issues such as ship habitability, exposure to chemicals, work life balance will rise on the agenda.» Increased expectation for carriers to influence good practices throughout the logistics supply chain (i.e. ports, warehouses).

¹¹ DNV, 2008

Whose responsibility?

'We recognize that it's easy to manage sustainability impacts in our own operations; and in principle, all suppliers need to address impacts in their supply chains as well.'

Source: Customer Interview

Drawing the Line

'Any violations on H&S, Security, Anti-corruption would be an automatic "No".'

Source: Customer Interview

SOCIAL RESPONSIBILITY

International container shipping companies must assume greater responsibility for respect and protection of human rights within their spheres of influence—especially in those countries and environments where state responsibility for protection of human rights is weak.

In particular, international container shipping lines can play an important role in ensuring access to markets for underprivileged producers or regions. Local and national stakeholders likely will look to the private sector for wider socio-economic benefits in small communities. At the same time, port owners and local communities will make it a requirement that port operators and shipping lines contribute to local socio-economic development—and that they document the impacts. Customers likely will take a more measured approach to the social responsibility performance of carriers, as well. We expect to see some customers seek to explore partnerships that can leverage mutual assets and skills to create wider societal benefits for vulnerable or underserved markets.

Over the next five to seven years we can expect to see:

Regulatory developments	Stakeholder perspectives
<ul style="list-style-type: none">» MLC significantly addresses sea farers' employment and social rights and will require the same standards for chartered and owned vessels by 2011.» Accountability increasingly coming from non-traditional sources in places of weak governance.» Regulations placing more emphasis on due diligence.» Continued efforts on part of WTO and World Bank to incentivize development.	<ul style="list-style-type: none">» UN/Ruggie framework becoming reference for accountability.» Increasing concern over onshore activities and human rights abuses.» Complicity issue elevating responsibility to "guilt by association."» Concerns over unsafe working conditions and discrimination.» Trend toward increased local content.» Best-practice focus on strategic alignment of corporate community investment. Bottom of the Pyramid (BOP) opportunities receiving more attention.

BUSINESS ETHICS

Anti-corruption programs and other business ethics efforts in the international container shipping industry likely are to grow in response to pressure from stakeholders and customers responding to poor performance. We predict customers will expect international container shipping lines to put in place and enforce a number of business ethics programs. Such programs eventually must extend to supply chain partners, as well. Regulation is expected to play some role in these developments, notably in relation to corporate disclosure. Still, the most significant initiatives around business ethics and supply chain governance are most likely to remain national than international.

Over the next five to seven years we can expect to see:

Regulatory developments	Stakeholder perspectives
<ul style="list-style-type: none"> » Increased regulatory reporting and whistle blowing. » Increased scope of responsibility (across value chain). » FCPA enforcement, and OECD & UN Conventions tightened. » Local enforcement, e.g. India develops integrity pacts. 	<ul style="list-style-type: none"> » Increased expectations for transparency across full value chain. » Proactive approach to stakeholder engagement and communications. » Collective action expected; industry is ready to take action. » Reduction in petty corruption.

Managing the Risks

'We are not slowing commerce but we need to close security gaps. In high risk countries we take additional precautions: increased visibility, increased seals, and increased checks. These are being passed to the transport provider.'

Source: Customer Interview

SECURITY

Supply chain security will remain a predominant concern of governments, regulators, consignees, and shipping company customers over the next decade. During this time, government, regulators, and other supply chain partners will serve as the main drivers of improved performance, but customers are unlikely to push for improved performance as long as they are comfortable that an "appropriate" performance in line with voluntary schemes such as the United States Customers Trade Against Terrorism initiative (US C-TPAT) and the European Commission Authorized Economic Operator concept (AEO), is ensured.

In the absence of a major security incident, no new significant regulatory initiatives are expected. That said, regulators are expected to tighten enforcement of existing regulations and to seek additional information from supply chain participants to enhance risk assessment tools. International harmonization and mutual recognition (e.g. US C-TPAT and AEO) is not expected to take effect in any significant degree leaving carriers with a patchwork of regulatory requirements. The current multi-layered approach to security will be the dominant paradigm, though some regulators will feel tempted to introduce unilateral requirements to satisfy public demand and/or political pressure. Regulators will put more emphasis on strengthening advanced cargo information schemes (ACI).

The general trend towards increased transparency will put additional pressure on the logistics supply chain to guarantee stellar security. Some international container shipping lines will see opportunities in upholding high standards under all circumstances. These companies recognize that serious security breaches can have wide-ranging reputational and operational impacts, as well as serious cost implications. Such companies will look to organize their security efforts within a management system approach to ensure continuous improvement. They also will strive to collect and report appropriate data to regulators, enforcement agencies, and supply chain partners.

Moving forward, we predict that while the principle of "shippers' load, stow and count" will remain in place (i.e. that the customer has the responsibility for cargo content legality), pressure on carriers to assume responsibility for container content will mount. With this in mind, major port operators may opt for scanning even in the absence of clear regulatory requirements as a means to differentiate themselves in the marketplace.

Over the next five to seven years will see:

Security Matters

‘One significant security breach will not lead us to terminate a relationship but several breaches could.’

Source: Customer Interview

Regulatory developments	Stakeholder perspectives
<ul style="list-style-type: none"> » Tightening and enforcement of existing regulation (such as Advance Cargo Information and voluntary schemes such as AEO). » Initial efforts to harmonize regulations such as the US-TPAT and the EU AEO but unlikely to go very far. » In the absence of a “dirty bomb” or significant security (terrorist related) breach the American 100% scanning law will continue to be postponed. 	<ul style="list-style-type: none"> » High probability of more regional and national initiatives. » Increased expectations for carriers to take greater responsibility for the container content. » Limited scanning on the part of major port operators. » Focus on transportation of illegal waste could result in more expectations for security arrangements around its shipment.

ii. Future Trends Shaping the Business Environment

Our research has shown that developing pressures in the five hot-button areas of sustainability are, to varying degrees, influenced by four longer-term trends that will have tremendous impact on the international container shipping industry. In some cases, the impacts of these macro-level issues already are evident. We believe that container shipping lines must begin to develop a better understanding of these trends if they wish to capitalize on them to get ahead. Failure to adapt likely will have significant cost implications.

HYPER-TRANSPARENCY

The notion of hyper-transparency takes the idea of transparency and extends it exponentially. It reflects the way consumers, customers, local communities, investors, regulators, and other key stakeholders increasingly expect full visibility into how business operates, how it performs, and the impact of business on people, profit, and the planet as a whole. Developments in information communication technologies are pushing and enabling this trend as they provide us with the means required to receive and to process information (think Smartphones that can be used as airplane boarding passes).

Ubiquity of Information

‘There will be no place to hide. Companies will not be the source of information in the future.’

Source: Customer Interview

Examples of hyper-transparency
<ul style="list-style-type: none"> » Corporate reporting laws now require increasing disclosure on financial and non-financial performance. » Consumer expectations for transparency result in new mobile phone applications such as the “Good Guide,” which allows consumers to access information about the sustainability performance of a particular product. » Greenwashingindex.com, which allows consumers and citizens to register and debate corporate “green-washing.” » Both carbon-labeling schemes (voluntary and regulatory), and sustainability consortia, which drive product transparency.

The hyper-transparency trend will have several important implications for the international container shipping industry as a whole:

- » There will be no place to hide, and companies will be required to facilitate full transparency on the performance of ships and their operational impacts.

Tangible Accountability

‘Get there (transparency) – or you will be forced there.’

Source: Customer Interview

- » There will be growing demand for real-time information on cargo movement through GPS solutions.
- » There will be growing expectations for information about container-per-lane environmental impacts, including emission data. (This could, in fact, become a standard data point on every customer invoice—and not the value-add that some companies plan it to become).
- » The bar for supply chain partner performance will be raised.
- » The industry will be faced with increased pressure to take responsibility for the cargo it moves.

REGULATED CARBON AND RESOURCE CONSTRAINTS

Present trends in world population, energy demand, food production, and resource depletion will drive new regulations that force companies to measure individual impacts on specific resources such as water and air. What’s more, the risk of climate change will force companies to be required to account for solutions at ecosystem levels (e.g. how business activities affect the water supply). General resource constraints will force companies to develop new business models that emphasize using more with less. These models will embrace increased reuse, remanufacturing and recycling, to name a few.

Similarly, the risk of climate change likely will result in a wide-ranging set of regulations including new markets, emissions tracking, industry process, and product standards and incentive structures.

Examples of regulated carbon and resource constraints

- » 80 percent of the world’s ecosystem services are degrading faster than they can recover; and 60 percent of European cities’ ground water is used faster than it can be replenished.
- » Environmental markets are developing, and a growing number of natural resources will be valued for their functions, e.g. a tree can have more ‘value’ alive (bio-diversity and carbon sequestration) than dead (timber).
- » DIY eco-monitoring is on the rise, arming individuals with information enabling more immediate responses to corporate misbehavior.
- » Over 100 global businesses have signed up to trade emissions products on the European Climate Exchange (ECX) since its inception in 2005.

Adaptation Strategies

‘Sustainability drives our choice of materials, for example, the cotton-water problem forces us to explore other material alternatives. This will have an impact on the global supply chain set up’.

Source: Customer Interview

Regulated carbon and resource constraints will have several important implications for the international container shipping industry:

- » Companies will need to measure embedded carbon in products and services, and will request for GHG emission data for all shipments on a container/lane basis.
- » There will be greater opportunities for developing new services around low-carbon options and renewed interest in the needs to improve carbon performance to off-set costs, align with customer expectations, and appease critical stakeholders;
- » SO_x, NO_x, Black Carbon and PM will become subject to more scrutiny, especially considering the new regulation beyond the regulation already underway (IMO Annex VI MEPC 59).
- » Countries and/or communities likely will adopt their own regulations rather than wait for global IMO regulations to take full effect; e.g. significant growth in ECA zones.
- » Companies will develop new solutions and services that help customers reduce environmental footprints throughout their supply chains.

Responsible Value Chain

‘For us there is no difference between a chartered vessel and a wholly owned vessel [from a labor violations perspective].’

Source: Customer Interview

RISE OF RIGHTS AND LOCAL GOVERNANCE

When governments fail to protect the rights of their citizens and the power of business increases, individual companies increasingly are expected to step in. Over the last few years, this trend has manifested itself in two different ways. First, there are increased expectations for businesses to protect and respect human rights within their spheres of influence. In particular, businesses must expect to be held accountable for a wider set of rights, including the right to health care and access to clean water, to name a few.

The other manifestation of the changing stance on rights and local governance relates to a dramatic shift in the role of the public in setting government policy. Communities have begun to assert their status as “local democracies” and make choices that carry the weight of law on a range of sustainability issues, from public health and safety to sustainable business, agricultural practices and quality of life in those communities. This is driven by the perception of legislators and the private sector have preempted local democracy and kept individuals out of important decision-making processes, preempting the rights of citizens to create sustainable communities.

Examples of rise of rights and local governance

- » Local community responsiveness and assertiveness, especially on social networks like Facebook and Twitter.
- » Californian SOx regulation is a direct response to the federal government’s perceived failure to recognize the health problems stemming from global shipping.
- » The United Nations Special Representative, John Ruggie, is in the process of developing a human rights and business framework that places a strong emphasis on the importance of integrating human rights in business decisions.
- » The number of proxy resolutions on human rights is increasing every year.

The rise of rights and local governance will have several important implications for the interational container shipping industry:

- » The growing need for human rights risk assessment and mitigation mechanisms throughout business processes including supply chain partners will force carriers to look beyond operational risks to also include cargo they move, and customers/markets they serve.
- » Local communities will respond more swiftly and aggressively to perceived environmental and human rights abuses, including failure to comply with local environmental standards.
- » Greater expectations for the industry’s local socio-economic contributions, including local hiring, and products and services sourcing.

Signs of Self-Regulation

‘For labor and human rights we don’t just look at the country law; we look at neighboring countries’ local laws and compare. We sometimes make the determination that a bar needs to be set.’

Source: Customer Interview



BSR Future Trends Research

A durable sustainability strategy needs to consider long-term sustainability trends and drivers, while taking into account today's competitive realities. BSR conducted proprietary future trends research to identify the societal mega themes that will shape the context in which shipping companies and its customers operate.

The methodology of this work built on "Sustainability Outlook", a joint project by BSR and the Institute for the Future (ITF), that explored how emerging trends in sustainability are impacting the business landscape and driving innovation.

SOCIO-ECONOMIC CHANGES

There will be a shift in the global center of gravity towards Asia resulting in new economic and cultural paradigms competing and/or complementing existing ones. The rise of an Asian middle class with more than 1 billion middle-income consumers by 2030 will accelerate planetary resource constraints¹². Two billion people will be added to the global population by 2050, and three-quarters of them are expected to live in a big city¹³.

The rise of the East will transform supply chains differently. Changes will result in more complex models that blend globalization and localization all at once. This will be compounded by the rapid urbanization that is associating these dramatic shifts (with the expectation that three out of four people will be living in cities by 2050, as opposed to one out of two people today¹⁴). Because of the available resource pool, these developments will have profound implications for current infrastructures and transportation systems that have not been developed to accommodate major change.

Socio-economic changes will have several important implications for the international container shipping industry:

- » Congestion will increase rapidly around major port cities, resulting in more pollution, which, in turn, will trigger more regulation.
- » New trade routes will be more south-south resulting in opportunities for serving new markets, including more underserved markets.
- » New transportation models will ensure the effective delivery of products to distribution channels.

Our research indicates these trends will play an important role in shaping the future business environment in the international container shipping industry. We predict similar trends will impact the way important supply-chain partners such as ports, terminal operators, and truck operators will be expected to operate, too; e.g. ports increasingly will experience pressures for adopting stronger local environmental regulations as well as regulations and schemes that ensure a greater contribution from international shipping to local socio-economic development.

¹² Chatham House, 2009

¹³ WWF, 2008

¹⁴ WBCSD, 2010

iii. Customers - seeking different value propositions

Customers are as much a part of the wider trends forcing change on the industry as they represent a force on their own. As key stakeholders to the industry, it is increasingly important to understand the value proposition that major customers will be seeking from container shipping lines:

Decision Criteria

'We use carbon, cost and customer service as the criteria when buying transportation services on a lane-by-lane basis.'

Source: Customer Interview

- » *Reduced costs* stemming from operational efficiencies.
- » *Reduced reputation and operational risk exposure* throughout the supply chain for everything from poor sustainability management to mishandled security.
- » *Reduced sustainability footprint* throughout the supply chain, driven by consumers and stakeholders.
- » *Increased efficiency and reliability* resulting from good management of environmental, social and financial activities.
- » *Sustainability innovations* and solutions in supply chain management.

The vast majority of customers we interviewed currently are seeking a mix of reduced costs, reduced sustainability risk and increased efficiency and reliability. The research suggests that this applies more or less across the sustainability topic categories, where customers view sustainability as an entry requirement and increasingly as an "all things being equal selection criterion." This need can be addressed through robust sustainability performance.

However, in the coming years a growing number of customers, including the largest customers, likely will seek a value proposition that also includes a reduced logistics sustainability foot-print and, more importantly, logistics services and solutions that help customers optimize their wider sustainability foot-print throughout their own supply chains. These customers will want to see their leading providers become "partners for sustainability," and will want to see their providers get recognized for innovation. Environment will be the primary topic although some customers will raise the bar on the social responsibility performance as well.

Logistics Provider to Strategic Partner

'Be pro-active. Advise us and help us get ahead. What do I need to care about and why?'

Source: Customer Interview

Today

- » Sustainability serves as a qualifier or as "extra credit" when all else is equal.
- » Specific standards and indices for sustainability are under development.
- » Environment, and carbon in particular, is the primary focus for most.
- » Other key areas such as ethics and health and security are taken for granted as baseline requirements.
- » Primary focus on direct impact of carrier operations.

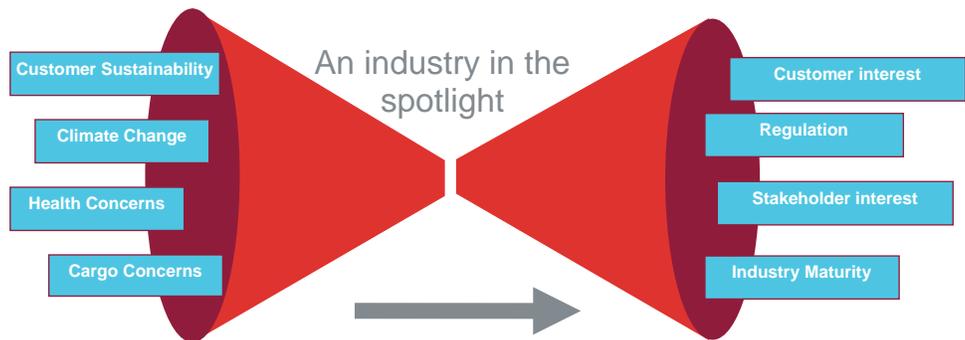
Tomorrow

- » Increased weight of sustainability factors in procurement decisions.
 - » Dramatically increased transparency, down to product-level and container-specific impacts.
 - » Expanded focus to full range of environmental impacts, i.e., waste, water, ship building/breaking/recycling, etc.
 - » Human rights and labor issues will become more important for some.
 - » Expanded focus to full supply chain impacts, i.e., chartered vessels, ports, trucking companies, etc.
-

Implications for Container Shipping Companies

As we look across the regulatory, customer, stakeholder and market sustainability landscapes in the international container shipping industry, and through the future trends lens, a number of key points are emerging:

First and foremost, the container shipping industry is entering more choppy waters. The bar will be raised across the board, notably as a number of regulatory changes take effect over the coming years. The industry is no longer “hidden”; regulators, stakeholders, and customers all realize the impacts and the potential for change that the industry holds. Some companies will find this as an unwelcome development. Others will find a way to benefit.



Second, changes in the business environment will contribute to the emergence of more distinct business strategies. In the past, most major shipping lines have pursued a low-cost strategy coupled with acceptable lead times, reliability, and operational standards. Moving forward, some carriers likely will begin to explore moving away from the deadly cost game to pursue strategies focused on customer service, true door-to-door solutions and value-adding services. The ability of some low-cost, low-performing government controlled carriers to withstand the last couple of years' crisis must have reinforced this message with those in the industry who realize that they won't beat the (subsidized) competition on costs alone. We are likely to see that some major carriers will seize upon the significant 'sustainability changes' to develop strategies based on real differentiation while others will continue to resist the changing tide.

Third, carriers must consider sustainability challenges upstream and downstream their value chains. Reduce emissions. Use less water. Use less energy and fuel. Every business can start to do things like this. Today, most international container shipping lines are seamlessly integrated with other service providers and value chain partners such as ports, terminal operators, trucking companies, chartered vessels operators, logistics providers, and freight forwarders. Often, such partners provide services that are a fully integrated element in the value proposition presented to the customers. This has direct consequences -

- » Chartered vessels and vessel sharing agreements (VSAs) will come under increased scrutiny; a sustainability strategy that doesn't address up to 50 percent of capacity is failing to address a huge part of the foot-print.

Future Customer Needs

'We will be looking for fewer, more strategic partners'

Source: Customer Interview

- » Regulators, customers, supply chain partners, and stakeholders will want more and better information about international container shipping lines' performance (real-time, if it's available). It is likely that ports and communities will require more data on the environmental performance of docking ships to determine cost of access.

With all of this in mind, we see four strategic options that will be pursued:

Figure 2:

Value creation from product and business model transformation	Dreamers » Only green lanes, low-sulfur fuel only, loose sight of costs, solar panel driven ships, etc.	Winners » Use operational efficiency as a baseline to develop new green services to customers such as green lanes, and complete data sets on cargo impacts. » Proactively work with customers on reducing their sustainability impacts.
	Losers » Pursue a strict legal compliance strategy.	Defenders » Focus on operational efficiency while building green elements into existing business models. » Limited innovation around services. » Limited cooperation with value chain partners.
Value creation from waste, cost, and risk reduction		
	Capacity of tactical execution	Capacity for strategic execution

Inspired by David A. Lubin and Daniel C. Esty in Harvard Business Review, May 2010

The 'winners' likely will be those companies that truly manage to embrace the changing business environment. A winning strategy is also one that:

- » **Embraces a new sense of responsibility.** For the international container shipping industry this includes chartered vessels and third party suppliers, but also extends to the harder to manage 'what's in the box' issues.
- » **Partners for innovation.** Better collaboration is required by all stakeholders involved, including partners, suppliers, vendors, and customers. This means:
 - Within the shipping company – to firmly assert sustainability as part of business strategy (and imbed the value proposition that this presents);
 - Across the company's own supply chain – to enable effective management of sustainability impacts;
 - Across and between value chains with civil society organizations, customers and regulators - to enable innovative solutions to be realized.

Concluding Thoughts – Time to Step up a Gear

The spotlight is shining on an industry that has inherently deep bonds with global societies, trade and the environment. These connections create a responsibility - one that, in an increasingly hyper-transparent world, requires a more integrated response. Our research implies that sustainability challenges facing the industry will increase in significance over the next five to seven years, whilst socio-economic changes will continue to result in more complex supply chain networks. As elaborated in this report, shipping companies have an opportunity to respond strategically to these signals and create business benefit and value. Value that also benefits the environment and the communities global supply chains serve.