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Beyond the familiar

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Beyond the familiar

Global integration for metals, mining and forest and paper companies

By Dirk Claessens and Allan Henderson

Globalization is placing new demands on today's metals, mining and forest and paper companies – especially in running effective operations on a global scale and sustaining a strong, profitable business. The real goal for these companies is to become globally integrated enterprises, where the company is focused on connecting and leveraging various sources of production and value creation, regardless of the physical location or organizational ownership of these resources.

We believe there are three strong business strategies for today's environment: Market Share Grabbing, Value Chain Stretching and, sometimes, Niche Playing, and that the long-term business winners in each of these categories will be the companies that continue to become more globally integrated.

The business situation today

Metals, mining and forest and paper companies are similar in many ways – primarily focused on producing raw materials or intermediate products, such as sheets and bars, and only secondarily focused on finished products.

These industries need to transport heavy materials by ship, not simply send information over the Internet or transport light materials by plane. Many of these companies are anchored in regions where there are forests and mineral deposits, often far from major markets. However, steel, aluminum and paper mills need not be co-located with raw materials.

Perhaps most important, the metals, mining and forest and paper industries are all commodities-based and are prone to boom/bust business cycles.

Definitions

- Mining companies explore for, mine and process metal ores such as copper, nickel and iron, as well as some non-metals.
- Metals companies produce a variety of intermediate metal products such as coils, bars and sheets.
- Forest and paper companies own or lease forests, cut timber, process wood and produce forest-related products such as lumber, wood-based panel, pulp, paper and packaging products.

Metals and mining companies are running with strong profits today, but forest and paper companies are struggling. Leading mining companies are realizing operating margins of 30-40 percent, and those margins have been increasing over the past five years.[1] The metals story is similar: leading steel and aluminum companies are making a 15-20 percent operating profit margin and have seen increasing profits over the past five years.[2]

However, leading forest and paper companies are seeing operating margins of only about 6 percent, a figure that has remained relatively flat for the past five years as paper demand has stagnated in traditional North American and Western European markets, causing significant price competition in commodity products.[3]

Additionally, as Figure 1 shows, there are numerous dynamics influencing the various industries today.

FIGURE 1.
Common dynamics in metals, mining and forest and paper.

Industry characteristic/dynamic	*Metals*	*Mining*	*Forest and paper*
Large increased demand in China/Asia	✓	✓	✓
Importance of operating on a global scale: global customers and global competition	✓	✓	✓
Rising costs	✓	✓	✓
Pressure for consolidation (mergers and acquisition) in a fragmented industry	✓	✓	✓
Environmental concerns	✓	✓	✓
High profit levels	✓	✓	✗
Rising prices	✓	✓	✗

Source: IBM Institute for Business Value.

Beyond the familiar

Global integration for metals, mining and forest and paper companies

What is a globally integrated enterprise?

With today's global market, deregulation has enabled the emergence of new market dynamics among many nations. And changing global demographics are shifting demand to new world regions, as well as creating new demand for different kinds of products. Many business people tend to view globalization as a quest for cheap labor; our studies, however, suggest globalization is more of a search for emerging markets. A recent IBM study shows that investment in production locations for all industries in 2006 was driven by the global search for new markets, rather than by cost reductions.[4]

A "globally integrated enterprise" is a company focused on connecting and leveraging various sources of production and value creation, regardless of the physical location or organizational ownership of these resources. The globally integrated enterprise is different from a traditional enterprise. It involves the close interaction among internal and external stakeholders, including employees, customers, partners, government agencies and other third parties with a stake in a product or service. It locates operations and functions anywhere in the world based on the right cost, skills and business environment. And it integrates those operations horizontally and globally. Specific characteristics of a globally integrated enterprise include:

- Partnering with other companies in the supply chain that offer better efficiencies
- Getting a bigger global footprint – via alliances or consolidation with companies that are strategic fits
- Integrating the whole business (internally and externally) and discouraging sub-optimized silos
- Specializing – focusing on what the company does best and outsourcing or partnering the rest
- Innovating the company's business model, operations and products
- Developing HR skills and recruiting new employees and leaders on a global basis.

Global integration addresses two key issues for metals, mining and forest and paper companies today:

- *Operational efficiency and effectiveness on a global scale* – New markets are emerging in new regions, and new production locations are needed in these regions..
- *Sustainable growth* – Metals, mining and forest and paper companies deal mostly in commodities, traditionally a cyclic business. While many of these companies are successful today, they should begin laying the foundation for success in leaner times.

Assessment of selected companies

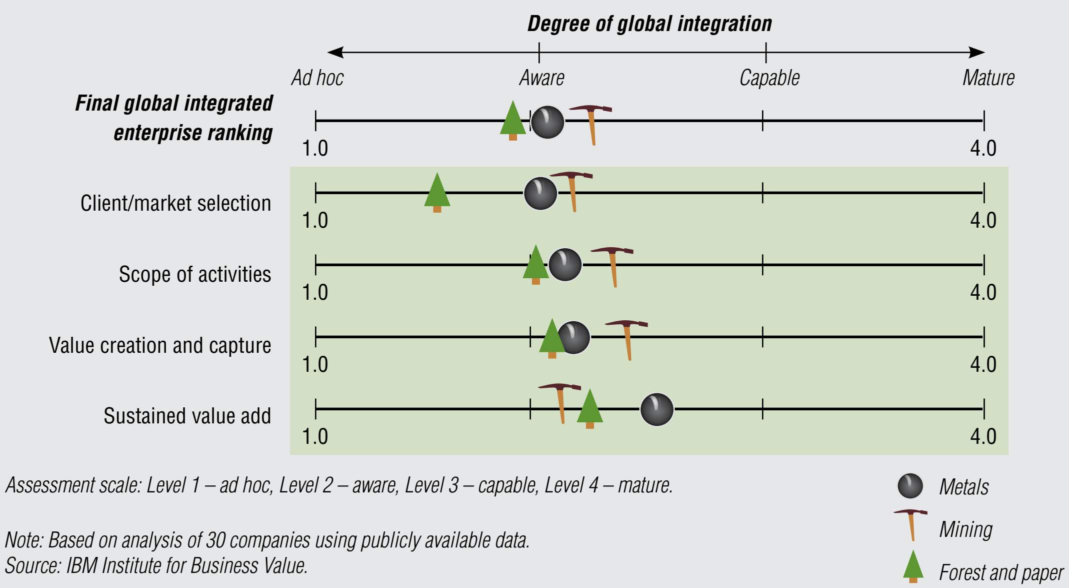
How well do metals, mining and forest and paper companies fit the model of a globally integrated enterprise? After assessing 30 major firms, we find that today's leading companies in metals, mining and forest and paper tend to be those that are already more globally integrated than their peers. We believe the long-term business winners in these industries will be those companies that continue to become even more globally integrated.

Globally integrated companies in mining, metals and forest and paper tend to be among the most successful in their respective industries.

Using publicly available information, we assessed ten companies in each of the metals, mining and forest and paper industries to get an indication of how the industries relate to global integration today.[5] Four categories of information were used to assess global integration in selected metals, mining and forest and paper companies to build the assessment:

1. *Do they serve global markets,* including revenue from local versus non-local markets, global clients and global value proposition/differentiation/branding?
2. *What is the scope of their activities,* including global production sites, sourcing hubs, assets and collaboration, both internally and externally?
3. *What is their value creation and capture,* including how efficiently do they run their production, supply chain and operations, and what is the degree of globalization for their value chain components?
4. *What is their sustained value add,* including long-term profitability by leveraging new resources, technology, standardized business processes and innovation capabilities?

FIGURE 2.
Global integration among metals, mining and forest and paper companies.



Assessment scale: Level 1 – ad hoc, Level 2 – aware, Level 3 – capable, Level 4 – mature.

Note: Based on analysis of 30 companies using publicly available data.
Source: IBM Institute for Business Value.

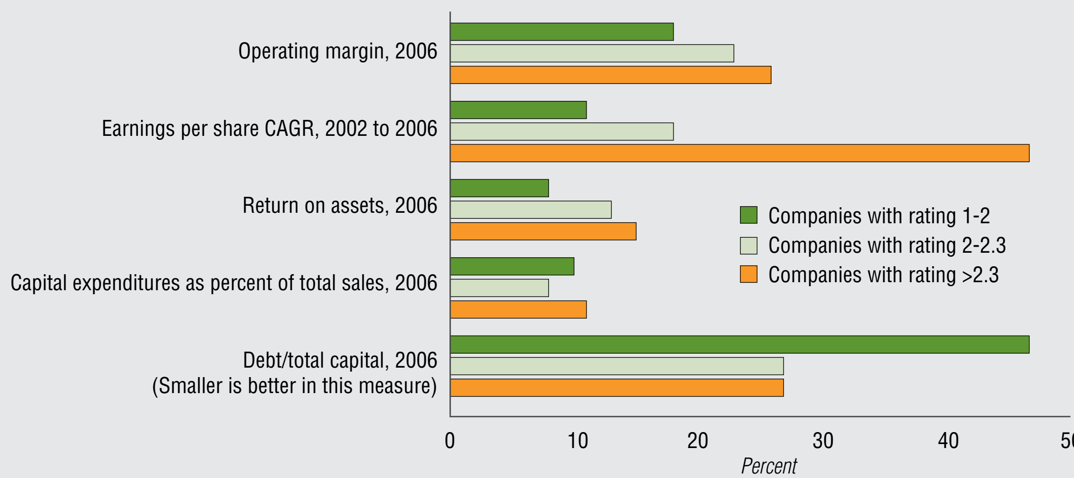
We then developed a score for each company on a four-point scale, ranging from ad hoc to mature.

Our assessment results, shown in the Figure 3, indicate that, in general, mining companies are leading in becoming globally integrated enterprises, while forest and paper companies are trailing. However, as a group, the assessed companies cluster in the awareness part of of the scale – with no companies in the mature range.

We also found that strong globally integrated enterprise scores correlate to stronger financial performance. Collectively, companies high on our scale have higher profits, greater earnings per share, compound annual growth rates, return on assets and less debt, as Figure 3 shows.[6]

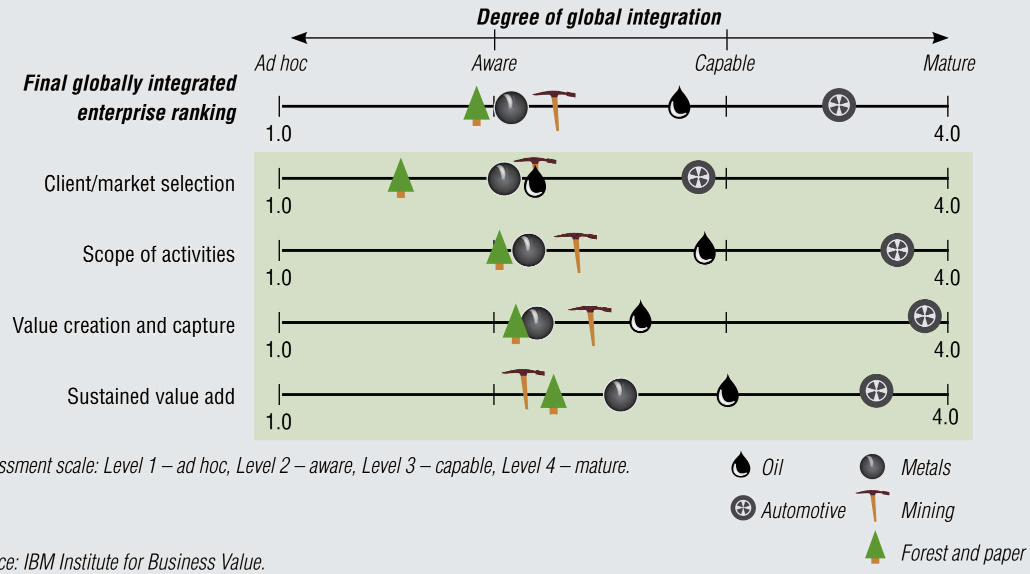
We also established benchmark scores by assessing ten leading oil companies (a similar industry to metals, mining and forest and paper) and five leading automotive companies (a leading customer for metals). The results, shown in Figure 4, show that automotive companies, with a more consumer-oriented product, are approaching the mature globally integrated enterprise range, followed by oil companies and, then, mining and metals. Forest and paper, again, trails.[7]

FIGURE 3.
Globally integrated companies tend to show stronger financial performance.



Source: IBM Institute for Business Value analysis of the degree of globalization of 30 companies within the metals, mining and forest and paper industries, based on publicly available information.

FIGURE 4.
Degree of global integration compared with selected automotive and oil companies.



Assessment scale: Level 1 – ad hoc, Level 2 – aware, Level 3 – capable, Level 4 – mature.

Source: IBM Institute for Business Value.

We believe the shift to increasing global integration will continue in these industries. The winners will be those that find innovative ways to become more globally integrated than their competition.

Becoming more globally integrated

There's plenty of room for most companies in metals, mining and forest and paper to improve their global integration. How can they do that?

Our research and studies of various industries suggest that a company can follow three general steps to become more globally integrated: reassess target markets, identify all the important business components of the company and ask five questions about each important business component of the company.

Step 1 – Reassess the target markets from a global perspective. Looking at all the world's markets, which markets around the globe have the greatest profit and revenue potential for the company? What new markets should the company enter? What old markets should the company exit because of declining profit or revenue potential?

The key thing, we believe, is to widen the company's view to encompass all the world's markets.

An example of aiming for new markets is the case of India-based Tata Steel, which has become a new strong player in the European market after its 2006 acquisition of Corus Group, a major European steel company with strong ties to high-end European customers.[8]

A goal should be to locate business functions where the best skills and resources are located – not necessarily at corporate headquarters or individual plants or mills.

Step 2 – Identify all the important business components of the company. Before deciding what to do about each part of the company, you need to identify the parts. A component business model (CBM) is a good framework for identifying the company's important business components, as well as those that can provide differentiation. Within the metals, mining and forest and paper industries, a CBM typically lays out a company's major business components in the areas of business development, sales and service, distribution, production, equipment and plant management, and business administration. And, for each of those areas, a CBM helps identify key business components in the areas of planning, control and execution.

Step 3 – Ask five questions related to a globally integrated enterprise about each important business component in the company. By asking a series of five questions about each business component, a company can develop a strategy for improving its global integration:

1. Where should the business function be done?
2. Who does the function?
3. What enablers are used?
4. How well does the business function integrate?
5. How innovative is it?

Let's look at each of those questions in turn.

Where should it be done? Can the business function be done better at a different geographic location where there are better skills and resources? The benefits for locating functions according availability of skills and resources include more effective operations, cost savings and a quicker response to market demands, especially in emerging markets.

The goal is to locate companywide functional components where the best skills and resources are (not necessarily all at a headquarters location and likely not all at plants or mills). For example, the company could set up global procurement centers or establish a global sales resource system for optimizing sales resources. The company could run distribution at a global level or use global standardized marketing programs locally. Or the company could locate some headquarters functions and corporate leaders in locations outside the home region.

The fact is that many business functions can be done at other locations besides the plant or headquarters. For example, while a CBM for a typical steel company indicates about 60 business components, only 8 need to be performed at a plant location.

Who does it? Many companies perform all of their business functions internally. But that's not the only way. Sometimes a business function can be done best by a collaborative partner. The options are:

- Do it yourself.
- Do it together with a partner (collaborate).
- Delegate completely to a partner (outsource).

The benefits the company is looking for by determining the best source to perform a business function include more flexible and effective operations. For example, the company could outsource non-core functions, such as finance and human resources, to a global partner, or share distribution and logistics responsibility with a global partner. Or, the company could do R&D collaboratively with internal teams working on a global basis – or even do R&D collaboratively with outside partners and suppliers. The company could even partner with another company to actually operate a mine, plant or mill.

As an example, Nippon Steel in Japan has been developing an overseas strategic alliance network and key joint ventures in several world regions, including:

- A joint venture partnership with ArcelorMittal in North America for the production of cold-rolled steel and joint research on steel sheets for automobiles
- Joint research with Pohang Iron and Steel Company (POSCO) in South Korea on steelmaking technology
- Joint venture with Baosteel for cold-rolled and hot-dipped galvanized steel sheets in China
- Joint venture with Siam United Steel for cold-rolled sheets in Thailand
- Joint venture with the Usiminas complex in Latin America for hot-dip galvanized sheets in South America.[9]

As another case example, International Paper in the United States has made significant investments in emerging countries. International Paper operates two European paper mills, 11 packaging plants in China and two paper mills in Brazil. It also has joint ventures in each of those regions. Recent investments include:

- Increasing the size of the Svetogorsk mill in Russia and acquiring 50 percent of Ilim Pulp, a Russian paper company
- Forming a joint venture with Sun Paper in China to produce coated consumer boards
- Partnering via asset swap with Votorantim Celulose e Papel S.A. in Brazil, giving International Paper one of the lowest-cost uncoated wood-free paper mills in the world.[10]

What enablers are used? Running a global business is complex, and it cannot be done well without technology enablers. A company will need to use enterprisewide technology to support global business processes.

The benefits are more flexible operations, more efficient operations and improved effectiveness. Another benefit of enterprisewide technology that supports global business processes is the ability to integrate acquired firms more smoothly.

For example, a globally integrated company will need a global enterprise resource planning system to support its single integrated global supply chain. It will also need to use global collaboration tools to support collaboration with internal teams and partners outside the company.

As an example, UPM in Finland is in the process of developing a single global supply chain with an initial focus on logistics. The need became more urgent as demand for paper began to weaken, caused by a drop in the consumption of magazine paper and newsprint. UPM launched Chain 2000, an initiative to develop common supply chain processes, including demand forecasting, sales planning, order fulfillment, logistics and information systems.[11] The initiative rolled out gradually to UPM's production facilities in Finland, Germany, France, the United Kingdom, China, Canada and the United States.

Each business segment should not be a silo, but part of an integrated, collaborative process.

The initial focus has been on distribution to end users and the planning and execution of ocean transportation. UPM uses numerous short-sea and deep-sea carriers to move its products from Finland into market.[12]

How well does it integrate? The goal is to run an integrated global enterprise, not a loose federation of separate regional entities that do things differently and in sub-optimized ways. Benefits to an integrated enterprise are more internal effectiveness and knowledge sharing, improved effectiveness in working with partners and quicker reaction to global customer needs.

Each important business component needs to be part of an integrated, companywide process. It should help support a "single global company" and discourage silos. And it should encourage a collaborative environment so that geographically dispersed internal teams and collaborative partners can work together as if they were part of one department on the same floor of a single building.

As an example, the marketing organization for BHP Billiton in Australia runs a single "book" for product distribution. The marketing group handles 27 commodities and sells to more than 1,200 customers around the globe – using a single integrated logistics operation.[13] The only major distinction lies within the price discovery mechanism. Distribution logistics is, in essence, not unique across products. Key attributes of the "One Book" system include organizing around customer groupings, instead of operational ones, and placing all of BHP Billiton's commodity businesses together with standardized processes, with one SAP-based enterprise resource planning infrastructure. Advantages for BHP Billiton include helping make sure leading practices are shared seamlessly throughout the company and helping to develop highly competent workforce talent, including cross-skills in multiple commodity areas such as supply chain optimization.[14]

How innovative is it? In today's globally integrated world, one of the few ways to differentiate a company is to develop better skills, ideas and solutions – in effect, knowing more than the competition and effectively applying that knowledge. Among the benefits a company might expect to accrue from such endeavors is the opportunity for increased revenue and profit (including reduced costs), more efficient operations and the chance to develop a competitive edge.

A company can innovate in three different dimensions: products, operations and business model. Many business leaders equate innovation only with product innovation – but sometimes it's even more important to develop innovative operations and innovative business models.

As an example, the paper operation of the Mondi Group in South Africa and the United Kingdom runs a network of four R&D and innovation centers to maintain a competitive position in the paper industry.[15] The innovation centers focus on new business opportunities, optimizing products and a "pushing the limits" innovation program that processes creative ideas from employees. Mondi won the Best Innovator 2005 award for sustainable innovation management and the GPard Process Award 2006 for its innovation process.[16]
One of Mondi's recent innovative products is neox, a product that, using nano-hybrid technology, combines the benefits of coated and uncoated paper to create a versatile color laser paper.[17]

Success strategies for today

Metals, mining and forest and paper companies can use three strong business strategies for success in today's increasingly competitive, global environment. The first two strategies support the fundamentals of global integration and should fit well with those companies aiming for a global footprint:

- *Market Share Grabbing* – This strategy encourages a company to expand its market share and global reach quickly via mergers and acquisitions with companies that are strategic fits.
- *Value Chain Stretching* – A company embarking upon this strategy expects to expand into higher-value products in the value chain.

The third strategy supports the fundamentals of global integration, but also works well for those companies working with a more limited footprint:

- *Niche Playing* – A company striving for a niche position plans to base its business on specialized products, services or business models.

Figure 5 shows how the three strategies support the fundamentals of a globally integrated enterprise.

However, these strategies – Market Share Grabbing, Value Chain Stretching and Niche Playing – are not universally strong across each industry segment (See Figure 6). All three are strong strategies for metals companies. Niche Playing is a moderately strong strategy for forest and paper companies, while the other two strategies are strong. For mining companies, Market Share Grabbing is strong, Value Chain Stretching is moderately strong and Niche Playing is fairly weak.

FIGURE 5.
Fundamentals of a globally integrated enterprise.

Global integration fundamental	*Market share grabbing*	*Value chain stretching*	*Niche playing*
Specialize – focus on what the company does best	◕	◕	●
Enter into new profitable markets anywhere in the world	●	◑	◔
Partner with other companies in the supply chain that can do it better than you	◑	◑	◑
Work collaboratively with its outside partners	◑	◑	◑
Get a bigger global footprint – via alliances or consolidation	●	◑	◔
Innovate the company's business model, operations, and product	◕	◕	●
Move towards high-value products that can command a premium	◑	●	●
Integrate the whole business (internally and externally) and discourage sub-optimized silos	●	●	●

○ *Low* → ● *High*

Source: IBM Institute for Business Value.

FIGURE 6.
Strategies for global integration have different general applicability to metals, mining and forest and paper companies.

	Market share grabbing	*Value chain stretching*	*Niche playing*
Metals companies	Strong	Strong	Strong
Mining companies	Strong	Moderate*	Weak
Forest & Paper companies	Strong	Strong	Moderate

*Note: *As long as mineral prices remain high, commodities are as profitable as " higher value" products*
Source: IBM Institute for Business Value.

Market Share Grabbing focuses on expanding marketing share and reach via mergers and acquisitions.

Strategy 1: Market Share Grabbing

The *Market Share Grabbing* strategy focuses on expanding market share and global reach quickly via mergers and acquisitions with companies that are strategic fits. Examples include the following:

- Arcelor and Mittal merged in 2006 to create ArcelorMittal, the world's largest steel company, which is three times the size of its nearest competitor.[18]
- UPM acquired family-owned Haindl Papier in 2002 in order to strengthen its position in Central Europe.[19]
- Rio Tinto in the United Kingdom is in the process of acquiring Canada's Alcan for a larger footprint in aluminum.[20]

A company being acquired typically needs to be a strategic fit, such as having production capabilities in complementary or low-cost regions – or a strategic fit company might have proven success in markets complementary to those of the acquiring company.

Advantages of Market Share Grabbing include economies of scale, the ability to enter profitable new markets anywhere in the world and the attainment of influence with global customers and global suppliers

Challenges for Market Share Grabbers include swallowing something too big – or discovering after the fact that the acquired company has been fundamentally misjudged. Another challenge is the well-known merger and acquisition risk: the fact that approximately two-thirds of mergers fail to reach the goals set by top management.[21]

Enablers for Market Share Grabbers include transformed companywide processes for improved effectiveness and efficiency, as well as for quick assimilation of acquired companies. Technology throughout the company should be in place to support a globally integrated supply chain – as well as supporting collaboration of internal teams and partners (e-mail, internal blogs, instant messaging, virtual meetings, supply chain monitoring, etc.).

Strategy 2: Value Chain Stretching

The *Value Chain Stretching* strategy focuses on expanding into higher-value products in the value chain. Advantages to this strategy include the marketing of products that can command a premium price, access to a new higher-value customer set and innovation in the company's business model and products.

Examples of Value Chain Stretching include:

- ThyssenKrupp, a leading German steel maker, also makes components for automobiles.[22]

- CVRD and Baosteel are partnering on a new steel slab plant in Brazil, providing CVRD with products higher up in the value chain.[23]
- SCA in Sweden and other paper companies already produce consumer products for personal hygiene.[24]

The Value Chain Stretcher needs the ability to manufacture higher-value products, which often means products closer to end customers. It also needs the ability to leverage business and alliance partners to add value to the product and manage flexible product portfolios.

Value Chain Stretching needs technology enablers for making risk assessments for entering new markets, creating new products and working collaboratively with internal teams and partners.

Strategy 3: Niche Playing

Niche Playing encompasses running a business focused on specialized products, services or business models. A Niche Player can be a standalone company or a "division" of a larger corporation. Examples include:

- Tamco steel is producing rebar for market in California, with low shipping costs as the competitive advantage.[25]
- Ahlstrom Paper Group in the United States is making high-performance, fiber-based materials that serve niche markets worldwide. The company's fiber solutions are used in a large variety of everyday products for environmental, healthcare, transport, packaging, and home and office applications.[26]
- UPM has developed a label business in self-adhesive label stock, as well as a radio-frequency identification business.[27]

A Niche Player has the capabilities to make specialized products and stay on the leading edge. As well, a Niche Player may elect to be a service leader, competing with unique service capabilities such as very short order-to-delivery time.

Traditionally, niche companies are small firms with a regional footprint. However, easy global communications and the emergence of collaboration tools that work over the Internet can enable niche companies to work closely with global partners and global customers. This can give some niche companies a virtual worldwide reach, even though they may physically remain in a single region.

An advantage of Niche Playing includes "specializing" – focusing on what a company does best. Other advantages are that higher-value products command a premium price and a niche strategy drives innovation to help keep a company ahead of the moving competition. A Niche Player will also have strong, close relationships with customers in its niche markets.

Niche Players need technology that enables collaboration in product design and planning, as well as new product and service introduction. Additionally, these companies need technology to address process efficiency in manufacturing (automation, intelligent manufacturing, etc.), customer service and order handling, and management of demand, supply and price.

Conclusion

Metals, mining and forest and paper companies have specific challenges in order to accomplish global integration:

- Mines and mills are in fixed locations and cannot be moved easily.
- They must ship heavy materials long distances – not just send data over the Internet.
- Their businesses are subject to fluctuations in commodity prices.

These challenges imply the short-term focus of global integration for many companies will be on:

- Growing their global footprints, often by mergers or acquisitions, to leverage economies of scale and to reach global markets and customers
- Extending into higher-value products, for higher-margin returns
- Integrating their global supply chains and establishing common processes across the entire company for operating efficiencies
- Using processes and tools that encourage collaboration within the company and collaboration with partners – innovative ideas come faster via collaboration.

We believe the shift to increasing global integration will continue in these industries, although the shift may be slower than in other industries that operate higher in the value chain. But the winners will be those that find innovative ways to become more globally integrated than their competition.

About the authors

Dirk Claessens leads the IBM global industry practice for metals, a key industry for IBM with dedicated research and development teams and nearly 200 professionals worldwide. He has been with IBM since 1994 and has worked since the beginning of his career on assignments with metals companies, delivering strategy work, process redesign, application implementation and automation assignments. Recently, he has addressed steel conferences in Helsinki, Tokyo and Moscow on various metals-specific topics. He is a commercial engineer by education and holds an MBA from the Catholic University of Antwerp. Dirk can be reached at *dirk.a.claessens@be.ibm.com*.

Allan Henderson is a Senior Managing Consultant for the IBM Institute for Business Value. Allan's consulting experience includes most of the Industrial Sector industries, as well as education and learning. Allan is the author of The E-Learning Question and Answer Book and is also the co-author of two chapters in Irresistible! Markets, Models and Meta-Value in Consumer Electronics. Allan can be reached at *hender@us.ibm.com*.

Contributors

Bindu Oleti, Senior Consultant, Corporate Business Strategy, IBM Global Business Services, India.

Emmanuel A. Soy, Strategy and Change Consultant, IBM Global Business Services, India.

Abhishek Mitra, IT Analyst, IBM Integrated Technology Delivery, India.

Sivaram Krishnan, Associate Parter, Industrial Sector, IBM Global Business Services, India.

Jorma Saarikorpi, Forest and Paper Innovation Center Director, IBM Global Business Services, Finland.

Jose R. Favilla, Supply Chain Management Solutions Executive, IBM Global Business Services, United States.

Avnish Sabharwal, Associate Partner, Global Delivery, Strategy and Change, IBM Global Business Services, India.

Paul O'Dell, Business Development Executive, Industrial Sector, IBM Global Business Services, Australia.

Richard Mackinnon, Business Development Executive, Small and Medium Business, IBM Global Business Services, South Africa.

Divya Bansal, Application Developer, IBM Global Business Services, India.

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