

THE

ACCESS INSIGHT ROUNDTABLE REPORT

BRIDGING
GAPBRIDGING
MANUFACTURING
LEADERSHIP
ROUNDTABLE

Report on Executive Panels
and Roundtable Discussions

BY THE ACCESS GROUP

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MANUFACTURING LEADERSHIP ROUNDTABLE

Roundtable Summary

- 1 Information Technology is seen as an obstacle to innovation, not a catalyst for it. IT urgently needs fresh ideas if it is to have an effective strategic role.
- 2 Participants view IT innovation as better incremental, e.g. integrating decisioning systems for more flexibility, rather than as a 'big bang' creative breakthrough.
- 3 Quality and performance improvement can be innovative if they enable future innovation, while cost cutting is not an innovation strategy at all.
- 4 CEOs need to earmark specific funding for IT innovation.
- 5 Culture is a huge issue, and not just for IT. Getting a real performance and innovation culture, addressing the middle management crisis, and obtaining more employee engagement were flagged as critical needs across the organization

Introducing the Innovation Gap

"Canadian industry has lagged behind its international competitors. There is a significant gap with respect to innovation, including training, research and development, investments in new technologies, and the commercialization of new products. ... There has been less of a tendency to compete on the basis of new products, new processes, and new skills, and a greater reliance on other factors such as low Canadian dollar, slower growth in labor costs, and strong U.S. market demand. Those underlying conditions are now rapidly changing." - "Manufacturing 20-20", Canadian Manufacturers and Exporters, 2005

Manufacturing is a major force in Canada despite two decades of low cost overseas competition. According to CME, manufacturing accounts for 21% of direct economic activity and

55% of goods and services purchased in Canada. Seventy per cent of goods manufactured in Canada are exported, up from 25% in 1980. Manufactured products are 90% of Canada's merchandise exports. Manufacturing productivity growth of 2% is comparable with other leading Canadian sectors but modest by global marketplace standards, especially against the Far East where wage rates can be one twentieth those in Canada. Given Canada's competitive handicap on labor costs, Canada must depend on innovation to compete in the global economy.

How is Canada doing on innovating?

Not as well as we might hope. Canadian companies invest only 43 per cent per worker of what US companies spend in information and communications technology, according to the Information Technology Association of Canada. Statistics Canada reports labour productivity has been flat in Canada for more than two years, compared to single digit growth in the U.S. and more in some Far Eastern competitors.

Against this background, 75 people met on October 6 at the Richard Ivey School of Business for the Manufacturing Leadership Roundtable, "Bridging the Gap". They represented a cross section of Ontario industrial and product manufacturing, both large companies and small. The question on the table was: "What is the strategic and tactical role for the Canada's Information & Network Communications Technology Industry in Bridging the Canadian Manufacturing 'Excellence Gap' in Productivity & Innovation".

A nine person Leadership panel, manufacturers, technology vendors, and consultants, started the day discussing experiences of using technology to improve manufacturing competitiveness and closed the day by summarizing key points. In between, all participants joined in three breakout sessions: knowledge based manufacturing, the Lean business process, and innovation in manufacturing.

Throughout the day, we heard the frustrations of Canadian

manufacturers in facing very low cost competition from China, India, South America, and elsewhere. CATA recently said that: "Looking at a pure cost, Canada can't compete at the level of India or China; when you move up in the engineering class or the highly innovative manufacturing talent, Canada ranks right up there". In fact, some Roundtable participants seemed to be more comfortable talking about productivity than innovation. Notwithstanding, innovation was discussed as well as productivity, and both are highlighted in the rest of this Report.

Innovation for Competitive Advantage

A discussion of innovation could usefully be supported by a definition. "Being an innovator in the global marketplace requires a strategy of growth, melding research with engineering on products, whereas many so-called productivity efforts are really strategies of shrinkage," according to Chris Piper, associate professor and faculty director of the Ivey Operations Program at Richard Ivey School of Business.

Quality techniques such as Six Sigma and TQM were once innovative but today are so widely adopted as to no longer be competitive advantages. Louis J. Vesprini, Stelco CIO, defined this as the distinction between "ongoing quality or productivity improvements that are 'price-of-admission' and revolutionary innovations like outsourcing".

To qualify as truly an innovation, it needs to be immense, inimitable and rare, meaning that break-through innovations are not easily achieved whereas productivity, being more incremental, is an easier option. Given the choice between innovation and productivity, many participants talked more about productivity. However, this raises a question as to whether productivity performance improvement can generate enough of a competitive advantage to do more than just keep pace with quality and cost improvements in other countries. It also raises a serious question as to how Canadian manufacturers are going to develop differentiated enough products and services in future.

For those looking for innovation, the search starts at the strategic level. Gerry Cooper, director of innovation for the Ontario Region, Industry Canada, says Dofasco's success compared to Stelco is attributable to a formal innovation strategy, prompting a lively discussion from the floor by Brian Mckeown, Stelco's manager of systems integration, about Dofasco's outward-looking perspective whereby they search the world for best practices it can bring back to Canada. Garth Dean, director of a Microsoft business unit also sees innovation as a management practice. "Adaptive organizations are better placed to be innovative," he believes.

For Walter Lowe, manager, marketing operations, Siemens Business Services Canada Inc. "Canada's ethnic diversity still gives Canada a significant advantage in providing customer support". This points to the wisdom of selectively augmenting products into solutions in order to help customers become more competitive in their markets.

Can a short term innovation focus be successful? A panelist evidently concerned about short term survival in an era of rapid change and win-at-all-costs competition makes a well-argued case for the short-term perspective. However, the overwhelming view was that we need to think through longer term implications of performance, investment and scale – especially when some innovations require multi-year acts of faith to develop them and bring them to market.

In the end, the participants concluded that innovation is different for every company. They clearly understand what success means in their own markets. Indeed, the panelists' organizations seem generally to be holding their own in their respective fields.

IT should drive innovation but often does not

Information technology can be a powerful innovation and change enabler, especially when used to foster adaptive processes. However, a surprising number of participants see

IT as a substantial obstacle to innovation and change. IT, they said, takes too long to respond to requests and proposals for innovation, and often is not proactive in leading the innovation charge.

The widespread perception is that IT has failed to take on the role of innovation driver. This is one of the most crucial points to come out of the Roundtable. Several participants characterize IT as being averse to risk – seeking uptime stability rather than supporting innovation. It seemed that in many Ontario manufacturers, innovative managers bypass IT and work with the operations executive or the CEO in upgrading technology.

The ‘IT Innovation in Manufacturing’ executive roundtable

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hosted by Siemens after the Leadership panel discussion reinforces this point – “the Manufacturing VP rather than IT should talk to the CEO about the IT solutions needed”. Not only is technology innovation in need of renewed IT focus, it is also essential to fund it systematically. It is shocking that less than half of the Roundtable participants have formal innovation funding in place. This disclosure, associated with the perception of IT as a barrier to innovation, is significant to continued manufacturing growth. A much more organized approach to innovation is clearly needed in many Ontario manufacturing companies.

The concern about IT and innovation is evidently deep seated and pervasive. What causes IT to be the obstacle? The

consensus was that an inappropriate culture is the culprit. The subject of culture is raised later in this report.

Manufacturing and IT Innovation

“A history of technology innovation is a history of defense against low cost international competition”, said Tim Armstrong, vice-president, corporate systems of Canadian General Tower, an automotive supplier. CGT has replaced several legacy systems with a single enterprise resource planning system (in this case, Microsoft’s Axapta software) innovating its supply chain to reduce costs for every one for much more intelligent prioritization, decisioning and re-tooling on the fly. The automation has brought routine costs down.

Is this true innovation? Well, yes – especially in the sense that future innovation can best occur with a flexible technology platform and information base in place. Different aspects of manufacturing management are stressed by different companies. For example, 3M has improved IT process control and then have worked with academia to refine the ratio of product quality to cost, as recounted at the ‘IT Innovation in Manufacturing’ roundtable.

Savino DiPasquale, GlaxoSmithKline’s CIO said that because “GSK’s business is innovation intensive ...considerable attention is paid to project management.” Roy Boorsma, assistant general manager of Toyota’s Information Systems Department said: “Toyota looks at IT holistically, identifying the right information and elevating it to a higher capability – then goes on to look for next opportunity....Toyota socializes innovation ideas widely so everyone knows the innovations in process”.

Cognos’ multilingual product software development is a good example of technology driving innovation. Software design specialists recognized a lack of available additional programming budget for a multilingual product. Cognos designers took the initiative to deconstruct the programming

process. They then automated it, increasing productivity by a factor of 15 and winning a Canadian Productivity award.

A second breakout session, hosted by Adobe, poses questions about the direction the knowledge based industry is taking. Participants want more consistency, for example, which CAD standards to adopt. It is also evident that many participants are giving high priority to getting the shop floor to deal with complex tools, and want help in tapping into shop floor knowledge of better ways that existing engineering processes may prevent from coming to light.

Lean is not mean

The lean business process roundtable, hosted by Microsoft, emphasizes that lean is less about reducing transaction administration and workforce costs, and more about continuous improvement. The goals are to drive waste out of business and to grow the business in order to redeploy ineffectively used resources.

A culture of lean must come from the top and spread progressively across the organization, celebrating successes along the way. Lean is a journey that is never completed. Lean is evidently well entrenched in Ontario manufacturing. For example, “before the rise in the Canadian dollar, only a third of Sheridan College’s advisory companies saw Lean as appropriate to include in the Sheridan applied engineering program”, according to Gary Closson, Sheridan’s dean, applied computing and engineering sciences. Today, there is rapidly growing interest in sharing Lean best practices.

Spar says that Lean is a passion for them, especially standardizing their processes, encouraging R&D, and spreading the cross functional team gospel. As a result, they are correcting a perception that ‘unique’ is incompatible with ‘Lean’.

To overcome supply chain resistance and make Lean work

with customers that are not Lean, Toyota conducts ongoing shop floor training and discussion to make problems visible to everyone.

David Wood, president of W. C. Wood, a refrigeration appliances manufacturer, practices continuous improvement with a focus on actions, especially in redirecting the business and revenue model around service not just products. Several companies who involve their customers in the Lean process advocate meeting face to face in your plant or theirs to get new ideas. A printing company provides Lean prices for standardized offerings and differentiated pricing for finer tolerances.

A small liquid filtration systems company with worldwide customers has moved from being purely a job shop into providing customized specifications. They put engineering intelligence “into a box, reducing high turnover in the engineering group, shortening the design process, making time for more R&D, speeding up design quotes, and improving their presentations to customers”.

“A culture of lean must come from the top and spread progressively across the organization celebrating success along the way. Lean is a journey that is never completed.”

Steve Fisher, president of Boeing Canada emphasized the importance of evangelizing the reasons for the hard work involved in Lean, especially when implementing it in a unionized environment.

Communication with customers and supplier.

There is general agreement that manufacturing organizations

should listen more to their customers and suppliers – and also to employees. Organizations must ask questions and engage in dialog, not just be the recipient of information. For example, to find out customer expectations, “put yourself in the customer’s shoes as you test customer facing processes to see how they perform for the customer”.

Most participants agree that customers should be involved in innovation, for example putting manufacturers in touch with super users, and helping to drive costs out of the customer’s value chain.

The participants see a variety of opportunities for performance improvement with suppliers. Several participants are seeking to transform supplier relationships by making them innovation partners and sharing risks. Jim Merry, senior business development manager, Adobe cites the example of Daimler Chrysler “publishing the innovation they expected from their suppliers in a document that is made available to suppliers”.

The opinion was expressed that it is hard to get the Voice of the Customer paid sufficient attention in a large organization, and it is clear from the ensuing discussion that several participants are indeed experiencing that. The suggestion is to put call center people more into a ‘customer experience’ conversation with customers.

Levelling the playing field

Other countries promote their manufacturing sector more, according to several exporters. However, it is refreshing not to hear a general call for government support as might have perhaps been expected. The focus is more on what we can do to help ourselves, which is encouraging from an Ontario manufacturing innovation viewpoint.

However, government help is seen as needed to prevent intellectual property being copied by foreign competitors. This is

particularly a danger in outsourcing core competencies, especially when Canadian manufacturers are being forced by cost pressure to outsource more of their manufacturing and management processes, away from their Canadian suppliers. This coincidentally helps to perpetuate the spiral of manufacturing rationalization in Canada.

A second area where government help is identified as a need is in reducing the environmental, legislative and fiscal disparities with other countries. The participants see foreign competitors getting advantages from better tax treatment and being held to lower environmental standards in their home countries. One company is at a 22% tax disadvantage against importers. The rising Canadian currency is obviously a major concern, compounded by the rise in energy costs, although it must be noted that the currency rise has been mitigated by cheaper capital.

The Innovation Culture Challenge

Getting employees engaged in innovation, especially in IT, is called out as a crucial issue that is only in the very early stages of resolution. This does not surprise this writer – who, like many who work in the field of performance management and organizational development, sees an increasing number of organizations today becoming extremely concerned about what it takes to become truly innovative.

Many participants speak of a “culture of innovation”. But, what is it and how can it be achieved? An innovation culture has proved very hard to articulate, harder to achieve, and even harder to sustain. This is evidently the case with many of the participants who, like a growing number of organizations, are adamant that achieving a high performance culture is an urgent strategic need. However, the message from the participants is quite clear: few of them can point to sustained results, experiencing instead among other things mixed leadership messages, employee dissatisfaction, and a continuing struggle to come close to performance goals consistently.

The elusiveness of an innovation culture is illustrated by the variety of ways in which participants refer to it, ranging from team sharing of ideas – to holding annual innovation education boot camps – to using measurement to change behavior to making front line supervisors better coaches of their teams.

Moreover, the generally short term culture of North America is further inhibiting innovation. A participant who has worked in Japan notes that for Japanese companies Six Sigma black belt status has only one step and that it can take as long as two years or even more to reach it. In contrast, in North America there are several intermediary stages because we are more short term in our thinking and need frequent gratification.

Leadership is mentioned frequently in the context of the CEO needing to instill an innovation mindset across the enterprise and have it followed consistently. What kind of leadership will take Ontario manufacturers to a position of advantage against global competition? Most participants agree that leadership and an innovation culture are needed along with more engaged employees, but it appears to be a lot more difficult to articulate how to get sustained results.

Drawing on the roundtable comments, several suggestions for creating a more effective culture of innovation and performance can be advanced:

- Take a top-down approach to culture change, leading by example from the top
- Mentor middle managers, supervisors and staff so as to take into account their own goals as well as the organization’s
- Help middle managers acquire a proactive management mindset that will communicate down to the shop floor – for example, Toyota recruits carefully, seeking out team players who will thrive on open communications and opportunities for personal growth

- Foster innovation through leadership by creating a sense of urgency and awareness and find a culture change rallying point – creating a “clear strategy and a shared sense of desperation”, or “taking a ‘create a crisis’ approach such as reducing the department first before reducing workload which inevitably leads to resistance”, or not hiring more people to handle growth
- Be sure to reinforce loyalty to employees, setting a goal and rewarding them when they achieve it as Toyota does.

Of course, it is easy to suggest these things, quite another thing to implement them successfully. The comments in this Report indicate that only some of the participants are making measurable progress towards an innovation culture. In this regard, the foregoing principles can be translated into some additional practical suggestions mentioned by participants, as follows:

- Don’t be afraid to experiment – it is generally agreed that the CEO should tolerate calculated risks, and not be too ready to hand out punishment for initiatives that fall short of expectations, in order to encourage a continued flow of innovation – bring recent graduates into the innovation team to provide access to fresh ideas free of preconceived notions
- Demonstrate patience when developing innovations and bringing them to market, because many innovations typically take multiple years to develop to a stage of market readiness
- Encourage the CEO to create an Office of Innovation that fosters innovation and creativity and incorporates innovation into normal business thinking – one participant’s CEO, seeking to reverse a history of adversarial management, has incorporated ‘innovation culture’ into the mission statement and tasked the HR manager to implement an innovation reward system; he is now discovering that employees do want to be engaged and do appreciate the shift

- View people as the seeds of innovation and deeply involve them in innovation opportunities through a teaming approach
- Create a culture in which some risk taking is permitted, if necessary, following the Japanese practice of simulating changes before implementing them, to mitigate implementation risk – being sure to document successes and failures and to gather the lessons from them, taking the example of the US military in holding after-action reviews recognizing that even successful projects can be done better.

Microsoft actively creates an environment that lets ideas flow, fosters energy, and makes room for mistakes. Similarly, Adobe continually engages its workforce, providing the right context, identification of critical areas, and ongoing measurement. For Siemens, culture is less of an issue than optimizing the support that IT provides for innovation.

By addressing organization-employee strategy and goal alignment, a strategic and sustainable shift upwards in performance culture can be brought about. Those who are doing this successfully generally find that innovation is not far behind.

Conclusions

A relatively small but growing group of organizations are making real progress in creating a shared learning environment and achieving sustainable performance improvement.

The topic of bridging the Canadian manufacturing 'Excellence Gap' in productivity & innovation is not an easy one to resolve, let alone in just a day of discussion. While productivity is more in evidence than innovation, it is a tribute to the organizers and participants that tangible evidence of innovation in Ontario can be detected in the day's proceedings.

From the comments about barriers to implementing manufacturing improvements and thus catching up with global

quality and performance standards, one can conclude that many Ontario manufacturers are still preoccupied with overcoming resistance to change and catching up with foreign productivity. They are still coming to grips with true manufacturing innovation.

Finally, any conversation is only as good as the participants and panelists. The Access Group thanks the executives from the organizations listed below for taking time from their schedules to add to our collective understanding, and for the enthusiasm they brought to the conversation. Thanks include the Richard Ivey School of Business at The University of Western Ontario and our other sponsors, CATAAlliance, Microsoft Canada, Siemens, Adobe, and EDGE Magazine.

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