Innovation for High Value-Adding Manufacturers

An IEE Seminar
Royal Aeronautical Society, London
Wednesday 27th October 2004

Chairman's summary notes

Chairman's Introduction – Alastair Ross, Codexx

Alastair opened the seminar by posing the question – what is innovation? He outlined the aspects of product, process and strategic innovation and contrasted the UK's success at invention with indifferent success at exploitation. He highlighted key questions for organisations seeking to become more innovative.

Patrick Robinson – DTI

Patrick compared the UK performance on value added against international competitors. He then reviewed the Government's recent report on innovation 'Competing in the global economy: the innovation challenge' which was published in December 2003, together with the resulting action plans. Part of the strategy is to increase the R&D investment in the UK from 1.9% GDP to 2.5% GDP by 2014 – this assumes both private and public investment. Patrick discussed the elements of the strategy and his views on the challenges.

Professor John Bessant – Cranfield

John provided a context for looking at Innovation. He gave examples of continuous incremental innovation, using the BIC biro as an example and, for an example of radical innovation, the ultra-bright LEDs to replace bulbs. He outlined innovation as covering the '4Ps' – Product, Process, Positioning and Paradigm. He introduced the concept of 'reframing' for a company to radically alter its business scope and strategy – the example of Bausch & Lomb moving from 'eyewear to eyecare'. Innovation needs to be seen holistically, covering invention, technology push, market pull, step change and incremental. Innovation is not an event – it is a process. Companies need to trigger new ideas, choose the ones which fit best with their strategy and their business and implement them, learning as they do so. Process is important, but companies need to balance structure with more ad hoc approaches to enable discontinuity. Companies need to make time for Innovation and also seek to identify the potential for disruptive innovations (both internally and externally) and endeavour to make room for disruptions in their own business – otherwise there is the danger that a competitor could get to them first.

Roger Tallis – New Product Development Director, Kohler Mira

Roger took the audience on a tour of Kohler Mira's approach to innovation and their processes for executing it. Mira use gap analysis tools and 10 year visions, to explore what customers and markets may need and how Mira are performing. Mira gives strong focus to people and have a strong programme for students, stretching them and seeking to retain the best. They endeavour to mix new 'content free' students with experienced personnel to help deliver innovative thinking. Mira have a knowledge capture library for project learning and keeping track of new technologies. They have a well-defined process to generate new ideas, select promising concepts then using a feasibility-benefits analysis to select the best concepts for new products. Once concepts are selected, Mira use a formal stage-gate approach for new product development and tools such as QFD. They try to balance creativity in the initial innovation cycle with a prescriptive approach at the back end – a so-called 'loose to noose' philosophy.

Mandy Chessell – Member of the IBM Academy of Technology, IBM

In the first half of her presentation, Mandy gave her views on innovation and the critical success factors. Success was not just about process. In her view the key factors were people and culture. Innovation needs the application of ideas, they don't have to be new ideas, so invention is not a pre-requisite. The innovator, the so-called 'bright spark', was the key and an organisation had to create an environment which recognised and supported these people, otherwise innovation would be quenched or the potential innovators leave. Successful innovation linked the 'bright spark' with an 'enabler', a 'champion' and then an 'implementer'. In the second half of her presentation Mandy outlined some of the approaches that IBM take to foster an environment that is supportive for innovators. Recruiting for diversity, the use of multiple formal and informal networks, a dual career structure covering technical and management personnel, awards, intellectual capital systems were all key factors.

Professor Chris Voss – London Business School

Chris Voss opened the afternoon session on process innovation. He emphasised the importance of linking product and process innovation – production needed to be sited close to new product development for effective process development and volume ramp-up. All the leading Japanese (and western) manufacturers recognised this and managed their outsourcing strategy accordingly. Companies can differentiate themselves from rivals with leading and 'hard to copy' processes – Rolls Royce is a good example of this. Companies need to stay abreast with the potential for new process technologies and should seek collaboration with suppliers to co-develop this. Chris gave the example of a knitting company that developed new ways to make low-cost lace with its equipment suppliers. Companies needed to apply both step-change process innovation as well as incremental improvement – the latter is needed to ensure sustainable improvement. Importantly companies need to look across their total value chain in deciding where best to innovate

Richard Thwaite – Director of IT, Ford of Europe

Richard reminded the audience of the radical innovation that Henry Ford brought with the combination of the product innovation that was the Model T and the process innovation that went into the River Rouge factory to make it and the dealer networks to sell it. He explained how the business paradigm that these innovations created, effectively became a millstone around the necks of automotive manufacturers in later decades. Specifically the discontinuities resulting from the 'build to plan' philosophy of the factories, the increasing customer requirements for choice, competitive price and on-time deliveries and the intermediary role of the dealers. The result at Ford of Europe was 8 weeks of inventory between factory and customer, indifferent delivery performance to customers and resulting impacts on customer loyalty. Ford determined that if they reduced this inventory to 2 weeks, they could save $600 per car and they could also drive up on-time delivery performance and customer satisfaction. Richard outlined the new manufacturing vision for Ford, of 'flexible mass production' based on the practices of multi-model plants, Lean, Modular Assembly, Variety, Make to Order and Supply Chain Visibility. He described the process innovation used to re-engineer the key order fulfilment process to drive down inventories and the key role of IT in enabling a common order bank. The major process,

technical and cultural changes required meant that this took 7 years from the initial vision to institutionalising the processes at Ford.

Kim Saville – Operations Director, Stannah Stairlifts

Kim overviewed Stannah's market and manufacturing operations. Whilst the stairlift is not an 'aspirational purchase' the combination of demographics and disposable income meant that this was a rapidly growing market in the UK and abroad and Stannah had a high share. However Stannah's Return On Sales was dropping through the 90s. This challenge became the 'burning platform' for manufacturing change, which began in 2000. But the Stannah culture was unique and paternalistic and thus the improvement strategy and execution thus had to fit the 'Stannah Way'. Kim outlined the approaches used, initially trying out multiple best practices with mixed effect, before creating a manufacturing strategy to guide the use of tools and execution. In tandem a highly consultative and open approach was used to gain buy-in and support from the production workforce, together with an organisational change to give more empowerment at the shopfloor. The results of the change were dramatic in terms of improvements in cost, quality and time – Stannah Stairlift also won the Best Factory Award in 2003. Kim also outlined a major piece of process innovation technology – the 'Stairtracker' used for installation measurement which resulted in significant improvements in 'right first time' installation in customer homes.

Chairman's Conclusions

Alastair Ross concluded the seminar with a summary of the presentations and then sought to identify the key conclusions from the day as follows:

- There is no single silver bullet for innovation – it's about people, process, product and process technology, strategy – an holistic view is needed
- Too much structure is bad! Too little structure is bad! Need a balance between structure and 'unstructure' – flexible upfront and then more structured – 'loose to noose'
- Need both incremental and step change innovation
- Organisations need to make time for innovation – it is a process, not an event
- Must recognise the innovators – the 'bright sparks' and ensure a culture to support them and utilise them
- Good innovation practices can be learned, there are many examples out there. Self-assessment tools are available from the DTI and consultancies
- Look across the value chain for the best areas for innovation
- A strategy for improvement is key to direct resources and activities most effectively

The final thought:

- Successful innovation comes when the focus is on what the customer values (or could value) and you innovate to best address this.

Alastair Ross

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