

Software Engineering is a key enabler for Business Innovation (Part 1)

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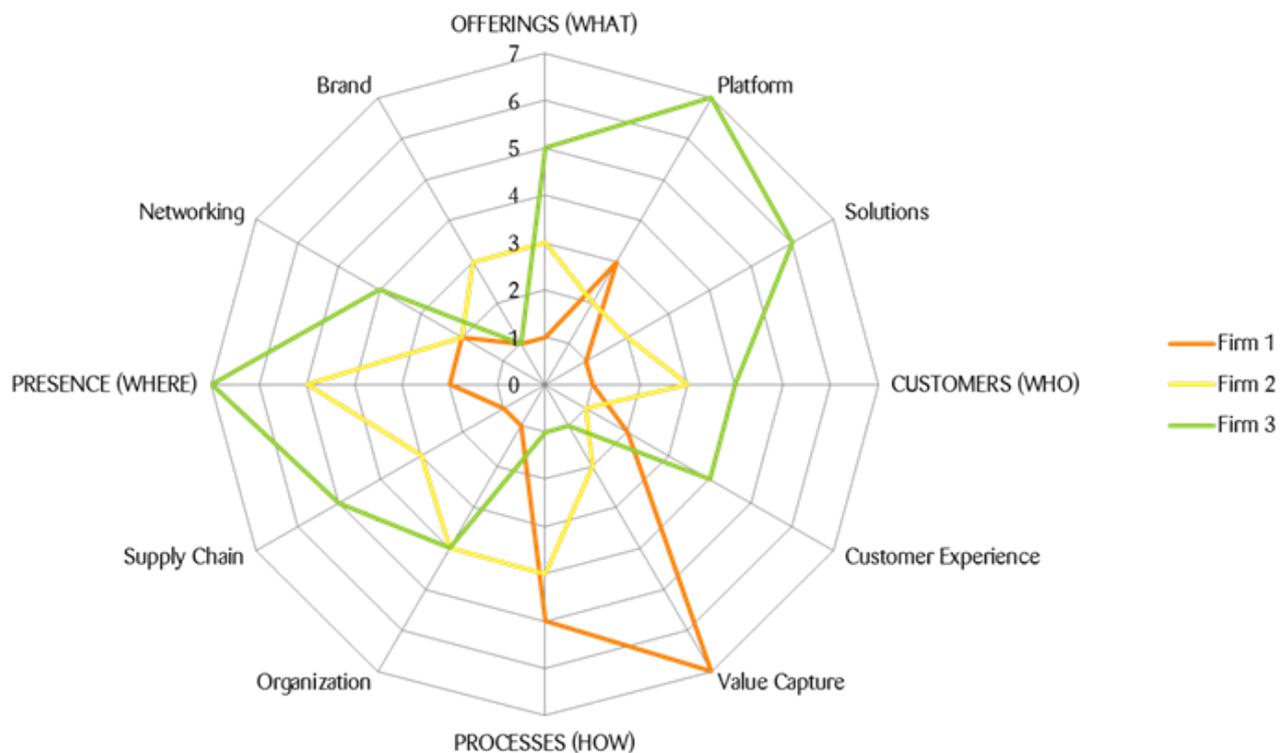
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Reading time: 3 minutes

Three years ago, my business development team persuaded me to attend (initially quite reluctantly) an IT Directors Forum that Richmond Events hosts aboard a cruise ship in the middle of the Channel. The appeal of these events is that nobody can escape and network bandwidth is a very scarce commodity. As a result IT Directors get the chance to have quality interactions, both amongst themselves, as well as with potential suppliers. I've found the ITDFs valuable and have been to every one since.

In last month's ITDF there was a certain buzz about the ship: "innovation". Lots of seminars, coaching sessions and discussions held over good food and wine were focused on how businesses can innovate. It seemed there was agreement that British businesses, and European for that matter, need to innovate in order to remain competitive when faced with increasingly stiff global competition. Consensus on the meaning of "innovation" however, was conspicuously absent.

A useful definition of what innovation in business means is provided by Sawhney and others in a short paper entitled "[The 12 Different Ways for Companies to Innovate](#)"¹. The key insight of this paper, and also the reason why there was no real agreement aboard MS Aurora on what innovation meant is that there are many dimensions in which businesses can be innovative. The authors identify a dozen different ways which are shown in the figure below, but I'm sure there are more.



Dimensions for business to innovate

The upper right quadrant (WHAT) shows innovation through research and development of new products and services that a firm can bring to market. A firm might also innovate by developing platforms for its offering so that it can create new products and services more easily through derivation from the platform. Firms might also innovate by developing solutions that combine and integrate existing products and services into novel offerings.

Another dimension is innovation in WHO consumes the firms offering, which denotes uncovering or creating new customer segments and meeting unmet demand. Firms might innovate by changing the Customer Experience, i.e. the way how customers interact with the firm and they could, for example, move call centre interaction to digital self-service. Once customer relationships are established, firms also innovate by trying to extract more value from these customers.

The lower left quadrant of the figure shows innovation in processes (HOW). This involves changing business processes so that they are more efficient and cost effective. Firms might derive value from changes to their organizational structure. The competitiveness of an organization might be improved through innovation in the supply chain, for example through improved exchange of information between members of the supply chain.

The last area of innovation involves the locale WHERE a firm markets its products and

services. New points of presence could be created or existing ones used in novel ways. A firm might innovate in the network with other organizations through which a company reaches its customers, by introducing new channels, partnerships or electronic markets. Finally, firms might make innovative changes to its branding, corporate identity and value proposition to reach out to a broader customer base.

The interesting observation for me, as a Chartered (Software) Engineer, is that innovation in many of these areas requires software to be written. Such software might be embedded in products, offer new services, create a digital user experience, automate business processes, establish new channels, and market places. Since these software systems are meant to create a competitive advantage, they tend to be bespoke rather than off-the-shelf solutions. Modern software engineering principles, techniques, tools, methods, and processes therefore become key enablers for innovation in almost all of the above areas.

I thought it would be worthwhile to examine the relationship between software engineering and these innovation dimensions more closely in a series of blog posts, which I shall post here on blog.zuhlke.com in the coming weeks and months. Meanwhile, I would be interested to know what your experience in the field of innovation, in your business, has been.

¹Sawhney M, Wolcott R C, Arroniz I: The 12 Different Ways for Companies to Innovate. In MIT Sloan Management Review Volume 47(3): page 75-82 in 2006