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# Designing high-technology services, or not: a bittersweet tale of love and loss

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What makes the design of high-technology services any different from other services?

Once upon an only-partially-elaborated-anecdote there was a large multinational company that made Special Stuff. The Special Stuff was especially complicated, and although everyone wanted it, very few people really understood it. So the large company had not just factories but also research labs. These developed all sorts of ways for the firm to make better and better Special Stuff; they were constantly coming up with new ideas and inventions. The more things they made up, the more Special Stuff got sold, and the more the large company spent on research. The engineers and scientists in the laboratories wore white coats and heavy spectacles and safety shoes, and smelled vaguely of industrial lubricant. They were happy.

One of these labs was in a town called Quite-Close-to-Here, and the scientists were especially happy. They liked to work hard in the lab during the morning, and then at lunch time they would often saunter over to the Special Stuff factory on the same site, and enjoy watching the production process. They liked the feeling that they were part of something important and exciting, and that the world was a better place for all the Special Stuff that they knew so much about.

One day the scientists woke up and found that the manufacturing plant next to the laboratory had been closed down and moved to Indonesia. They were gloomy at first, but then realized that they now had room for more expensive and complicated equipment, so they could do even more research. In fact, they could become one of the most important labs in the large firm's global network, doing projects and providing expertise to the firm's plants around the world. They missed their friends in the factory, but they liked being referred to as a *Global Centre of Excellence*.

A year or three later, across the ocean, at the big firm's headquarters, a man in much more elegant shoes, smelling of eau-de-cologne, scribbled some words on a flip chart. These words included: "market saturation", "cost consolidation" and "margin protection in a declining sector".

Then something strange started to happen to the projects that the lab in Quite-Close-to-Here was given to do. First, the projects became smaller. Then, they became less frequent. Then, the lab started getting angry letters from the firm's headquarters complaining that it was too expensive. Because it was doing less work, it had to spread its overhead costs over a smaller number of projects. And because the lab was costly, it was given fewer assignments. After a bit, the scientists decided to have a Meeting. At the Meeting they decided they had a Crisis. And then they decided they needed a Plan.

After much discussion, they concluded that the Plan should

be to transform themselves from an internal research and development lab, serving only the needs of the big firm, to a technical consultancy company, serving anyone with a problem to do with Special Stuff, or maybe anything a bit like Special Stuff. They began to think about how they would do this, and they did three things. Each one is amazing, because (and I forgive you if you begin to think I'm being a little judgemental here) each one is astonishingly stupid.

The first thing they did was to make a list of all the things they really liked doing. They thought of all the equipment they had, and all the experiments they had done over the years, and produced a long catalogue of things they would like to do for other people. In particular, it gave everyone a chance to make a case for the activities that they found interesting and exciting. When they'd finished making this inventory, they were thrilled; it was very long and it was full of brilliant ideas. Some of the suggestions involved dusting off some equipment they'd bought over the years but not had the chance to use very much, and this pleased them.

The next thing was to take their list and turn it into a PowerPoint presentation, and send off a team of the most respected and long-serving scientists to head office to present the plan. The head office listened, and then said, yes – give it a go. You've become very expensive, maybe this will help. But always remember that if we ask you to do something, we must take priority. And the scientists agreed that they'd always fit in the work for external customers around the work for the big firm.

The way this story is being told is obviously biased: of course, as I'm telling the tale, I can put whatever spin I like on it. But for now, assume I'm being reasonably accurate, and pause for a moment to ask yourself exactly why were the two actions just described quite so absurd. You should have a clear idea before I go on to the third, most gloriously ridiculous, stage of their stupidity.

This was to take on an engineering undergraduate student for a six-month placement and ask her to design an operating model of how the new business would operate. The undergraduate had to: undertake a competitor analysis; develop a marketing strategy; design market research; develop marketing and sales processes; devise a costing and budgeting system; establish an accounting and scheduling system; and, work out how the new operation would handle the conflicts between the demands of the big firm and assignments for the new, external customers. Meanwhile, the scientists began the task of thinking about how they could use a state-of-the-art Knowledge Management System to keep track of all the new exciting findings they would uncover. The student was clever, but inexperienced, and could make no headway.

Of course, soon the prevailing odour of industrial lubricant

was swamped by (initially) a whiff and (soon after) the sour stench of impending disaster. After a year of insanely impractical muddling at the lab, the big firm lost patience and everyone lost their jobs; most of the scientists were so steeped in Special Stuff that it was not easy to find other suitable employment. The redundancy packages were generous, but not enough to take away the misery from men and women in their forties and fifties who were essentially at the end of their hard-won scientific careers. The scientists were in a daze. The expensive equipment was scrapped. A year or two later the site was cleared. Not one external customer was ever served.

As a peripheral player in this tragedy, as the supervisor of the heroic but unlucky student, I was utterly shocked by the whole train of events. I like to think I've seen life, including management incompetence, redundancies, closures, and so on. *But this was the first time I'd seen scientists cry.* This wasn't a case study. It was real people having their lives broken, their hearts broken. They had given their souls to Special Stuff, and were now bereaved.

So why tell this story here? Three things stand out, and each one is essential to understanding why the words *design* and *high-technology* have some inherent contradictions.

First, the notion of design is about meeting needs, and thinking about customers or users. But many areas of technology are dominated by technical experts who are really not very interested in customers, but in the technology. In this case, the scientists were so enraptured with what they did (the high-technology), they couldn't make any progress about thinking how to serve a market (in other words, to design a service). They loved their technology so much that they couldn't see that having a lab was not the same as having a business.

Of course, academically, this is old news: the polarities of producer-led versus customer-oriented, and between technology-push and market-pull, are well documented. Stories of scientists who lack business savvy are commonplace. But the twist here is that the blockage which stopped these clever and accomplished technicians from prioritizing the needs and desires of their putative customers was not just intellectual. These people were so emotionally attached to their technical obsessions; it was entirely impossible for them to even begin any kind of honest design process for the service they aspired to offer. Who knows what was really going on in these scientists' heads? A reasonable hypothesis is that the organization's inability to start from the customer stemmed from a terror that the customers might ask for the wrong things, things that the scientists didn't want to do. "Technocentrism" stopped them designing the *content* of the service.

Secondly, the lack of empathy regarding what the customers might want or desire was matched by an apparent inability for the scientists to see themselves through the eyes of the would-be clients. Essentially, they believed that clients would rush to their door because they were a *Global Centre of Excellence*. But they found it hard to imagine that future customers might be interested in things like customer service, or cost-effectiveness; surely, the *important* thing was that the scientists knew loads about Special Stuff? Technocentrism stopped them designing the *presentation* of the service.

Thirdly, the scientists' obsession with the technical aspects led them to trivialize the process of working out how the

whole thing was going to work. Hiring a student greenhorn to deal with all the key elements of the business model was an indication of how the scientists perceived the importance of that element of the whole venture. Serious scientists worried about Special Stuff; business processes were minor irritations. Technocentrism stopped them designing the *design* of the service.

What can we learn from this unusually dismal story? Perhaps its main value is that it serves as an extreme case of a phenomenon which, in more diluted form, is more common. "Technology", "service" and "design" can be as much about love and heartache as about rational choice.

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