BusinessWeek
INSIGHT July 13, 2009 (Revised July 8, 2014)

Innovation Calls For I-Shaped People[1]

These thinkers have their feet firmly planted in the practical world, can stretch their heads to the clouds—and simultaneously span all of the space in between

by Bill Buxton

It has become almost a cliché to say that cross-disciplinary teams are a key component for successful innovation. If certain problems are beyond the scope of any individual—and most of them are—the way to address them is with a team with complementary skills and a common language in which they can all communicate. So far so good. But useful guidance starts to dry up rather quickly beyond that. Since there is no reliable secret formula that can be used by a hiring manager or someone trying to build up appropriate skill sets, I thought that I would share a way of thinking that I have found really useful.

There may be no "I" in team, but every team needs to be made up of "I-shaped" people.[2]

Let me set some context by starting with the complementary notion of "T" shaped people – a concept first introduced to me by my friend, the co-founder of IDEO, Bill Moggridge[3]. The vertical aspect of the T

[1] This is a revised version of the original article. While keeping close to the original text, I have corrected some points of history, fixed some layout and typography issues that plague the version on the BloombergBusinessweek site, link to which, nevertheless, appears in the footer, below.
[2] Note the serifs in the font used for the letter "I". They are significant!
[3] To give proper credit, I believe that the notion of "T" shaped people was first introduced by David Guest in an article called, The hunt is on for the Renaissnce Man of computing," which appeared September 17, 1991, in *The Independent* newspaper.

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represents depth, and the horizontal bar is breadth. So a T-shaped person has basic literacy in a relatively broad domain of relevant knowledge along with real depth of competence in a much narrower domain.

Three Pillars

When you slide multiple Ts together, their cross bars all overlap, indicating that the various Ts have a common ground, and, ideally, their combined stems can be broad enough to cover the domain of the problem that you are addressing. At Microsoft, we try to make sure that in looking at new product or services ideas, we have at least three Ts, which we call **BXT**, reflecting equal levels of competence and creativity in three domains: **B**usiness, e**X**perience design, and **T**echnology. These are three interdependent and interwoven pillars we see as the foundation for what we do.

But while I love the notion of T-shaped people, things are just not that simple. So as both compliment and complement, I propose I-shaped people. These have their feet firmly planted in the mud of the practical world, and yet stretch far enough to stick their head in the clouds when they need to. Furthermore, they simultaneously span all of the space in between.

This idea was crystallized in my mind thanks to another Englishman, one of the early pioneers of human-centered design, Brian Shackel. I once asked him if he had noticed any particular attributes that distinguished the students that went on to do remarkable things compared with the rest.

His answer was as immediate as it was insightful. He said: "The most successful students all had an outstanding capacity for abstract thinking, yet they also had a really strong grounding in physical materials and tools." By this, he meant that they could rise above the specifics of a particular problem to think about them in a more abstract, and in some ways, more general way.

Getting Their Hands Dirty

At the same time, as they were growing up, all had been deeply involved in things such as fixing bicycles or cars. In fact, it didn't matter how this was manifest. What was important that they had a "can do" and "have done" competence in some aspect of the messy, dirty, and fascinating world of physical materials and tools. In short, they were firmly grounded in reality.

These attributes have been at the core of all of the best teams that I have ever had the pleasure to work with, and it is to reflect the importance of these attributes – at the top and bottom of the spectrum, that the I's serifs serve.

Is this all there is to know about staffing for innovation? Of course not. But to summarize and synthesize, let me leave you with a few rules of thumb for building a cross-disciplinary team:

- The last thing a team needs is someone else like you. You already have the best in the world: you. What you need is people who fill in the gaps that you left in your own skill set as you built up competence in your specialty. That goes for everyone else on the team. (The only exceptions might be

when you are staffing another team, or the problem that you are working on is sufficiently hairy that you need to divide in order to conquer.)

- Know the difference between solid breadth of literacy and deep competence, and test for both in considering candidates. You do not need jacks-of-all-trades.
- If you think you know the core competencies needed for a team, list them on a bunch of Post-it notes, and have each person on the team write the name of the "go-to" person on the team who has the most depth in that area. If you do not have strong consistency in the responses, Houston, you probably have a problem.
- T-shaped is highly desired, but not sufficient. In staffing up teams, interview and test for I-shapedness. I don't care how good someone is either at the pragmatic or abstract level, there is someone out there who is equally good and who has strength at both ends. Find that person. If you doubt such people exist, just look at the profile of a reasonable sample of Nobel Prize winners. What I suggest you will find —based on having done so myself—is that a very high number share these combined T and I attributes.
- Hire people who do not require predictability and stability in order to be effective. Typically, each problem that confronts you is going to be different and will require different skills. Hence, teams will be constantly reconfigured to meet the demands in front of them.
- Hire people with strong interpersonal skills. Remember, I come from the computer industry and have seen my fair share of brilliant software engineers who have the social skills of an oyster. All that I can say is that I have also seen those with the same skills that know how to communicate, back down, listen, question, and compromise. A Renaissance team of T and I-shaped thinkers is a potentially volatile cocktail. Its value is too precious to be put at risk by even a single individual, regardless of how otherwise talented.

With that, all that I can leave you with is the imperative that you should always cross your Ts, but never dot your Is.

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