

Introducing the Collaboration Curve

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There's a classic story in economics primers illustrating the power of [network effects](#). It tells how the first fax machine gave little value to its owner--after all, there was no one else with whom to send and receive faxes. As time went by, however, the value of that first machine increased as other people bought fax machines, and soon its owner could send faxes to the far corners of the earth, and receive them in return.

The point of the story is how the value of a node in a network rises exponentially as more nodes are added to it. These are called network effects.

Now let's add a twist to the story. What would happen if, at the same time more fax machines joined the network, each machine rapidly improved its performance? The result would be an amplifying effect on the first level of exponential performance. One exponential effect occurs from growth in the number of nodes. A second amplifying effect arises from the improving performance of the machines themselves.

Fax machines, of course, don't perform better as you add more of them to a network. But [people and institutions do](#). And that's where the concept of network effects gets more interesting--when we apply it to how people might perform better.

What happens, for instance, as you add more participants to a carefully-designed environment? The online role-playing game [World of Warcraft \(WoW\)](#) provides an intriguing example. More than 11.5 million people around the world now play World of Warcraft. Performance in the game is measured by experience points, which are awarded to players as they successfully address progressively more difficult challenges. It takes roughly 150 hours of accumulated game play to earn the first 2 million experience points but players on average are able to earn another 8 million experience points in the next 150 hours of accumulated game play. Even though, within the game, experience points become more difficult to acquire as you advance, World of Warcraft players are improving their performance four times faster as they continue to play the game.

How? Most improve their performance by leveraging a broad set of discussion forums, wikis, databases, and instructional videos that exist outside the game. Here the players share experiences, tell stories, celebrate (and analyze) prodigious in-game achievements, and explore innovative approaches to addressing the challenges at hand. This "knowledge economy" is impressively wide and deep: in the US alone, the official forums hosted by Blizzard Entertainment contain tens of millions of postings in hundreds of forums. And

those are just the forums hosted by Blizzard. Independent forums are proliferating at an even faster rate.

Here's what interesting: The more players participate and interact with WoW's knowledge economy, the more valuable its resources become, and the faster players increase their rate of performance improvement. Said more generally, **the more participants--and interactions between those participants--you add to a carefully designed and nurtured environment, the more the rate of performance improvement goes up.**

Think about this for a minute. If what we're seeing in World of Warcraft--as well as in [SAP's Software Developer Network](#) and the world of big wave surfing, among other places--is indicative of something broader, then we're seeing the emergence of a new kind of learning curve as we scale connectivity and [learning through pull](#), rather than scaling efficiency through push. We call it the "collaboration curve."

Collaboration curves hold the potential to mobilize larger and more diverse groups of participants to innovate and create new value. In so doing they may also reverse the [diminishing returns dynamics of the experience curve](#) and deliver increasing returns to performance instead.

The evidence for the collaboration curve is, as yet, mostly anecdotal. But these curves may explain the rise of network-centric efforts ranging from open source software development to "crowdsourcing" to "networks of creation." In nearly all of these group efforts, rapid leaps in performance improvement arise as participants get better faster by working with others. These leaps in performance describe the shape and power of the collaboration curve, a new force in our professional and personal lives that turns the experience curve on its side, and explains why the whole of us, working, playing, and, learning together, can often be greater than the sum of our parts.

Do you see collaboration curves emerging? If so, where--and how do they come into being? Do they require particular environments and specific rules, protocols, and standards? Has anyone systematically quantified the rate of performance improvement in these new environments? We look forward to your thoughts.