Creating an Innovation Engine

By: Stephen Watt

Staying current with the latest emerging technologies and trends and identifying which ones are a fit for your organization is not easy. Even the most experienced IT leaders will stumble without a consistent process for evaluating and adopting emerging technologies, leading them to ask questions like, "How can I identify which technologies are the most promising? How can I align them with my organization's long-term strategy? What steps can or should be taken to make the most of my investments?"

Establishing the team

Before jumping into how to manage the introduction of emerging technologies within your organization, leaders should first consider creating a specific team that will be responsible for driving the company toward their emerging technology goals. Given the speculative nature of emerging technology work, it's recommended that emerging technology teams work alongside existing product or IT development teams as peers rather than report up to them. This helps maintain balance between prioritizing new endeavors and projects already established on a roadmap.

Typically, leaders of emerging technologies groups are dedicated to guiding and managing their team while maintaining their own technical breadth. The teams themselves are often small and consist of a team lead who is responsible for prototype architecture and design, alignment with product engineering and product management or IT delivery and basic project management. Other team members include software engineers who find constantly working on new projects energizing rather than draining. Once an emerging tech team is established, the team can begin employing a repeatable playbook for discovering, aligning, developing, and commercializing emerging technologies, regardless of which technology they are exploring.

Discovery

One of the most effective ways to discover new technologies is to identify the most credible voices that are providing information about emerging technologies applicable to your industry. These voices can be found on social media, in blogs, at industry conferences, and participating in sandbox projects within open source or industry foundations—any place members of your community communicate and collaborate about topics that are relevant to your business. Of course, many of the best ideas will come organically from within your own company, so it's important to make sure your emerging technologies group is visible internally and that associates understand what channels can be used to present ideas to the group.

Alignment to your strategy

Once a technology has been identified, the next step is to evaluate it and decide whether it's relevant for your present or future addressable market. In my experience, one of the best ways to begin this evaluation is to create what I refer to as an emerging technology point of view report. The point of view report provides your emerging technologies team and other internal stakeholders within an opportunity to articulate and discuss various elements of the new technology, including:

- The definition of the technology

- How the technology can or should be utilized for your business and customers

- Your strategy regarding the technology

- The market's view of the technology

- Potential challenges

- Your initial approach

While your emerging technologies team is drafting the point of view report, it's important to welcome contributions from as many parties as possible to understand the areas in which there is alignment and consensus and the areas which may require more deliberation.

A point of view report should also outline the business case around what needs to be done to take the emerging technology to market. This is an important validation step that justifies whether any future work surrounding the technology should take place. Many efforts to develop emerging technologies take longer than they should to fail because the team didn't establish a solid business case before they began development work. Conversely, if you're early in discovering an emerging technology, it can be difficult to discern whether there is a market for the technology or not, in which case you'll need to begin some measure of development to get something into the market and see if there is any interest. So early development can inform the points of view and create a form of an iterative product market-fit loop for a while.

Development

Assuming the outcome of the point of view report confirms an addressable market for the emerging technology, then the next step would be to begin development. Development can pose unique challenges for an emerging technologies team, because in many cases the point of view report has helped identify a particular product or service within an organization that could benefit from adopting the emerging technology. The team behind this product or service is often referred to as the "catcher."

In general, product engineering or IT development teams have an established roadmap and have allocated available resources to accomplish as much as possible. A common challenge for an emerging technologies team or function is working with the catchers to identify resources and in some cases, persuading them to create new resources to help incorporate the new technology into their existing roadmap. Naturally, catchers can be skeptical of a request for execution that can require additional time, budget or staffing and could compromise other action items that were already on their roadmap. Because of this, emerging technologies are at risk for deprioritization within many companies.

For many organizations, it makes sense to have an engineering team dedicated to emerging technologies work. This team of engineers should be able to begin executing and developing an emerging technology until a development team is able to hire and train engineers to maintain the technology once it's no longer considered "emerging." I've found that collaborating across product management, product engineering and development teams on the emerging technology's design is a critical step. This fosters accountability and inclusion across all the teams that touch the emerging technology and avoids a "not invented here" response when the technology is transitioned from one team to another. Collaboration also ensures that all relevant parties are aware of the technology's progress and goals stay aligned. They usually have the capacity to collaborate on the design, just not the development.

Commercialization

At some point, the development of the emerging technology will reach a phase where it could be considered an alpha or beta release and is on a trajectory towards a generally available (GA) release. At this point, the technology transfer process should begin between the emerging technology engineering managers and the catcher's engineer managers to produce a technology transfer agreement. This technology transfer agreement is effectively a way to navigate the Innovator's Dilemma, a business challenge coined by Clayton Christenson that explains why disruptive leaders can fail as technologies and industries change and what organizations can do to secure their market success over time.

This agreement describes how the emerging technology will be commercialized and which organization—typically the identified catcher—will be responsible for lifecycle maintenance once it reaches GA. This agreement includes an engineering staffing plan between the two teams, in which the emerging technologies team temporarily loans the catcher's team the engineers that helped develop the emerging technology to continue development until a GA release. This gives

the catcher's team time to hire additional staff and use the embedded emerging technologies team to train them and allow a skills transfer to take place. When the catching engineering team is ready and the duration that was agreed upon has expired, the emerging technology engineers transfer out of the catcher's team and back to their regular roles on the emerging technologies team to begin work on the next project.

Sewing emerging technologies into the fabric of an existing organization takes considerable dedication, strategic planning, and investment. By creating a dedicated emerging technologies function within your organization and cultivating collaboration with product and service teams, IT leaders can accelerate their innovation pipeline and harness the power of emerging technologies.