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Turning Innovation into Revenue

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As a member of your organization's emerging technologies team, your mission is to rapidly explore emerging technologies via experimentation and use your findings to help the business decide how to continuously evolve your corporate technical strategy. In many cases, emerging technologies teams are very small by design, which enables them to work quickly and take big risks. However, this also means that when the team discovers a promising project, they are not the most ideally suited to bring that work to customers.

Rather, this puts emerging technologies teams in the position to answer important questions such as, "When your engineering experiment proves to be successful, then what?" Or, "If you are not in a position to deliver your work as a product, how do you get it into the hands of a team that can commercialize your efforts?" Work on a promising project isn't completely done until another engineering team, or in some cases an upstream community, has the knowledge and expertise to make that work commercially available to customers.

Start early

Transferring an emerging technology to the right engineering team or upstream community that can introduce it to an addressable market is crucial. The partnership between the emerging technologies team and the long-term owner should be established as early as possible—usually, once the technology is a demonstrated proof of concept. To determine the right partner for a project, the emerging technologies team needs to assess if the project is fitting for introduction to the organization's current addressable market or to a future addressable market. Projects focused on current addressable markets follow different guidance on how and when to find a partner than projects focused on future addressable markets.

For most projects focused on current addressable markets, there is usually at least one—but possibly more than one—existing product or service in an organization's portfolio that an emerging technologies team can partner with. In these instances, I advise emerging tech engineers that have created a demonstrated proof of concept to cease coding until they have identified a partner. This helps limit the length of an engineering experience to the shortest possible interval, and it ensures that the project has not been developed to the point that there will be a significant learning curve for other teams.

If a project is focused on a future market, identifying a partner team that can evolve to take ownership of your technology is crucial. However, emerging tech teams should also plan to spend a longer period of time with the project, both prior to a transfer and in the midst of it. In this scenario, it's not uncommon for emerging tech teams to immerse themselves within the partner team for an extended period of time as the partner adds headcount and trains on the technology in question.

Innovations that focus on future market opportunities also benefit from early customer feedback as much as a good proof of concept. For example, if a net-new technology requires a dedicated engineering team, it's easier to justify doing so if existing customers are willing to go on record with their interest.For this reason, emerging technology teams should expect to spend more time working with sales engineering and other field roles to ensure that the overall design and direction of their future-focused technical project is aligned with future market opportunities.

In general, the technology transfer associated with a project that has future market focus is going to take at least two to three times the time, effort, and coordination associated with an emerging technology with a current market focus.Much of this additional effort is related to the additional partnerships that will need to be formed to justify the technology's development for the future market.

There is also another, more timely reason why defining partnership at this stage is so important. Before the current global economic climate drove hiring pauses throughout the tech industry, many emerging technology teams and their partners supported technology transfers with additional engineering and quality engineering resources that were tasked with taking on the new technology. With this in mind, emerging tech teams should focus on finding innovation champions and interested parties already within their own global engineering team—even those involved in the earliest stages of a project's experimental work—to help drive the project toward successful outcomes.

Returning to an innovation-first mindset

This may be surprising for some to hear, but the sooner we can recover emerging tech team members from projects, the better. This sentiment—that emerging technology engineers should return to experimental mode as quickly as possible—is really about sustaining the business model for emerging technologies. While a partner team should never feel ghosted by their emerging tech comrades—left with nothing but access to GitHub repositories and the memory of what was once a fruitful partnership—it's vital that these engineers, who are trained as experimenters and rapid iterators, return to an innovation-first mindset as soon as they can. The value proposition for emerging technologies teams is that when our experiments fail, the costs are

minimized. When our experiments succeed, they can be commercialized and supported as long-term enhancements to our organization's revenue stream. For this reason, we never want to position our emerging technology engineers as critical contributors on transferred projects for longer than necessary. Doing so hinders the emerging technologies team to iterate and leaves technology transfer work incomplete. Of course, the one exception to this rule is when there is value in an emerging technology engineer moving to the partner team along with the technology. Some projects are so complex that they benefit from this type of arrangement, though it may leave the emerging tech team short-handed for a time.

A transfer isn't over until the partner team says so

Emerging tech teams should not be the "dine and dash" types. If a partner team isn't successful due to a hasty transfer, then everyone's time has been wasted. While it is important to recoup emerging tech engineers in a timely manner, transfer plans should be constructed using graduated levels of support until the partner is self-reliant with the transferred technology. Tech transfer projects shouldn't move from one level of support to another without agreement from the partner that they are comfortable with the change.

Details vary from project to project, but generally the levels of support levels include:

Embedded engagement

Because the goal of the transfer is for the target team to integrate the new technology into the partner team's existing productization workflows, it is often easiest for an emerging tech engineer to join the target team for a number of sprints. Embedding emerging tech engineers into the partner team allows both teams to determine the fastest path to supporting the new technology's integration.

Consulting engagement

When the technology transfer is easy to manage, or when the partnership has been established early enough for the partner team to get up to speed on the new technology as part of their own ongoing work, then the primary role of emerging technologies teams is to provide guidance on design and implementation. This may involve some coding, but the majority of the work can usually be handled by the partner team with regular communication and meetings.

On-call engagement

When the partner team has achieved a certain level of autonomy with the new technology, the emerging technologies team should remain available to support them on an "as needed" basis. Projects that reach this stage are considered to be "graduated" from the tech transfer process, and the emerging tech engineers can begin focusing on new projects.

Everything else is negotiable

Through our tech transfer projects, my emerging technologies team has partnered with more than a dozen global engineering teams to incubate projects of varying complexities. Each partner team has its own development workflows, engineering bandwidth limitations, and technical expertise relative to the projects that we are partnering on. Consequently, the template for tech transfer agreement documents should be very simply organized and include the following:

- **What is being transferred?** This includes a list of specific code repositories but may also include details about open-source community roles that will also be transferred.

- **Who will be involved?** This should document anyone involved in the transfer—at minimum, individual contributors and engineering management—but product management and other consultants are typically included as well.

- **What is the timeline?** The timeline typically begins at the appropriate level of support the project will need at the forefront and will include an estimate of how long the emerging technologies team will provide support at each stage of the project until it can be considered graduated.

Beyond this baseline information, the unique details of each transfer effort should be captured in the document under relevant ad-hoc topics. Additionally, it's helpful to think of the agreement as a living document. Though teams should avoid adjusting the scope of a project as much as possible, updating the timeline is not uncommon. Regular checkpoint meetings between the emerging tech and partner teams are opportunities to adjust the agreement as needed.

Hopefully these guidelines help demystify what success can look like when it comes to partnering with other engineering teams or upstream communities and working with them to bring promising emerging technologies into the hands of customers. I firmly believe that emerging technology teams are 100 percent dependent on other teams to make new technologies successful, and so they must be 100 percent committed to working in tandem in pursuit of their mutual goals.