OPEN INNOVATION AT HP LABS

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A computing giant partnered with a movie studio to create a vital service for the 3D animated film industry.

DEFINING THE OPEN INNOVATION CHALLENGE

Computing titan HP Inc.'s advanced research group, HP Labs, wanted to create a new technology for rendering movies to support the production of 3D animated films. As animation technologies have grown increasingly sophisticated, movie studios have needed more computing power—including processing, data storage, and bandwidth—to transform animators' visions into magical, believable images on the silver screen. HP Labs sought to develop an on-demand, Internet-based rendering service that would help film makers swiftly scale up animation work at times of peak demand.

The project was highly complex on several fronts. For one thing, researchers at HP Labs had little understanding of the technological challenges involved, to say nothing of those challenges' interdependencies.

After all, HP's core competency lay in computing and data storage, not movie animation. What is more, HP Labs had no way of assessing the market potential of such a service since at that point in time, the technology was new to the market. As a former Director of Open Innovation at HP Labs noted, they were looking for a solution "that has never been there before." Would players in the animated film industry be interested in an offering such as this? If so, how interested?

To solve its innovation challenge, HP Labs would need access to sophisticated animation expertise and vast volumes of data generated by the movie-animation process.

CHOOSING AN OPEN INNOVATION APPROACH

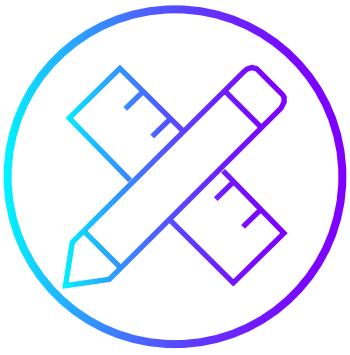
In light of the high degree of complexity characterizing the project, HP Labs opted to partner with a company that had the necessary complementary expertise, capabilities and resources in animation and rendering movies: DreamWorks Animation (see the sidebar, "Four modes of open innovation").

HP had collaborated successfully with the animation-technology leader on several other projects. Not only were the two companies well acquainted, but also they had a history of trust-based, rich, and multi-faceted interactions. Even so, the new project was unlike anything they had worked on together before. To get the most from the open innovation partnership, HP Labs would need to find a way to manage the risks that come with such partnerships. It would also have to foster knowledge sharing while simultaneously protecting both companies' intellectual property (IP) since, as a former Director of Open Innovation at HP Labs noted, "without sharing knowledge and open communication between partners, I do not think we could have [created significant impact] from this collaboration." In addition, HP Labs would need a method for gauging the potential market for the new technology.

MANAGING THE RISKS

Risks abound in any open innovation partnership set up to handle a complex problem characterized by multiple uncertainties. For example, there is always the possibility that the resulting innovation will fall flat in the marketplace, or that companies may lose control of sensitive information and value creation by sharing inappropriately with external partners.

In such a partnership, both companies must be willing to absorb these risks. To foster joint risk sharing in its partnership with DreamWorks Animation, HP Labs took steps to ensure that the two companies' strategic goals were aligned and that both were equally committed to the project in hand—not only in financial terms, but also in terms of human resources, motivations, and intellectual property. As the former manager of the Open Innovation Office at HP Labs pointed out: "Money and people are working together. [...] You need both. Otherwise, we would have failed." To secure this alignment and mutual commitment, HP Labs made sure each company designated responsible technical manager, set up roles and tools supporting a selective knowledge sharing strategy, and simplified legal IP policies.



BALANCING KNOWLEDGE SHARING WITH IP PROTECTION

The value of an open innovation partnership relies on the two companies' ability to exchange their complementary expertise and build on one another's strengths. But they must also protect sensitive information as well as each party's IP rights. To strike this balance, HP Labs and DreamWorks Animation established legal agreements clarifying what kinds of information could and could not be shared in the partnership and also with someone outside the project. HP Labs, for instance, never discloses all of its innovation processes and projects with external partners. So it kept some information about its organization secret, and did not share every detail about the project with DreamWorks Animation. However, it did let DreamWorks see its roadmap for its servers and cloud computing capabilities. Meanwhile, DreamWorks Animation shared data associated with its movies, along with rendering technology applications used with the data. Although such data and information was sensitive, sharing was crucial to solving the innovation challenge.

To facilitate knowledge exchange, technical program managers from both companies served as knowledge brokers and helped spur communication among team members, as well as between technical teams and other units, such as marketing. The partners also established formal written guidelines specifying how teams should exchange information and who had to review or approve particular decisions. In addition, the companies decided to co-locate team members from both organizations. Daily technical meetings, along with monthly executive-level meetings, kept communications flowing and ensured that the project goals remained front and center in everyone's minds.

The two companies also used a simple model to define rules regarding any IP emerging from the partnership. The rules were tailored to each organization's business model. For instance, all new know-how related to computing infrastructure would be patented and owned by HP, while new technologies related to movie animation would be patented and owned by DreamWorks Animation—regardless of which company developed them. As the former Director of Open Innovation at HP Labs explained: "This model works very well when we have two partners from different sectors. DreamWorks Animation does not want to enter the computing sector, and HP does not want to enter the animation business."

GAUGING MARKET INTEREST

HP Labs and DreamWorks Animation conducted experiments and reached out to potential users to test and refine their assumptions about the new service's technological capabilities and market potential. For example, after creating a prototype of the service, the companies invited digital studios around the world to learn more about the project and to experiment with the prototype by making short animated films. As many as 13 studios seized the opportunity, enabling the partners to gather vital feedback with which to refine the service.

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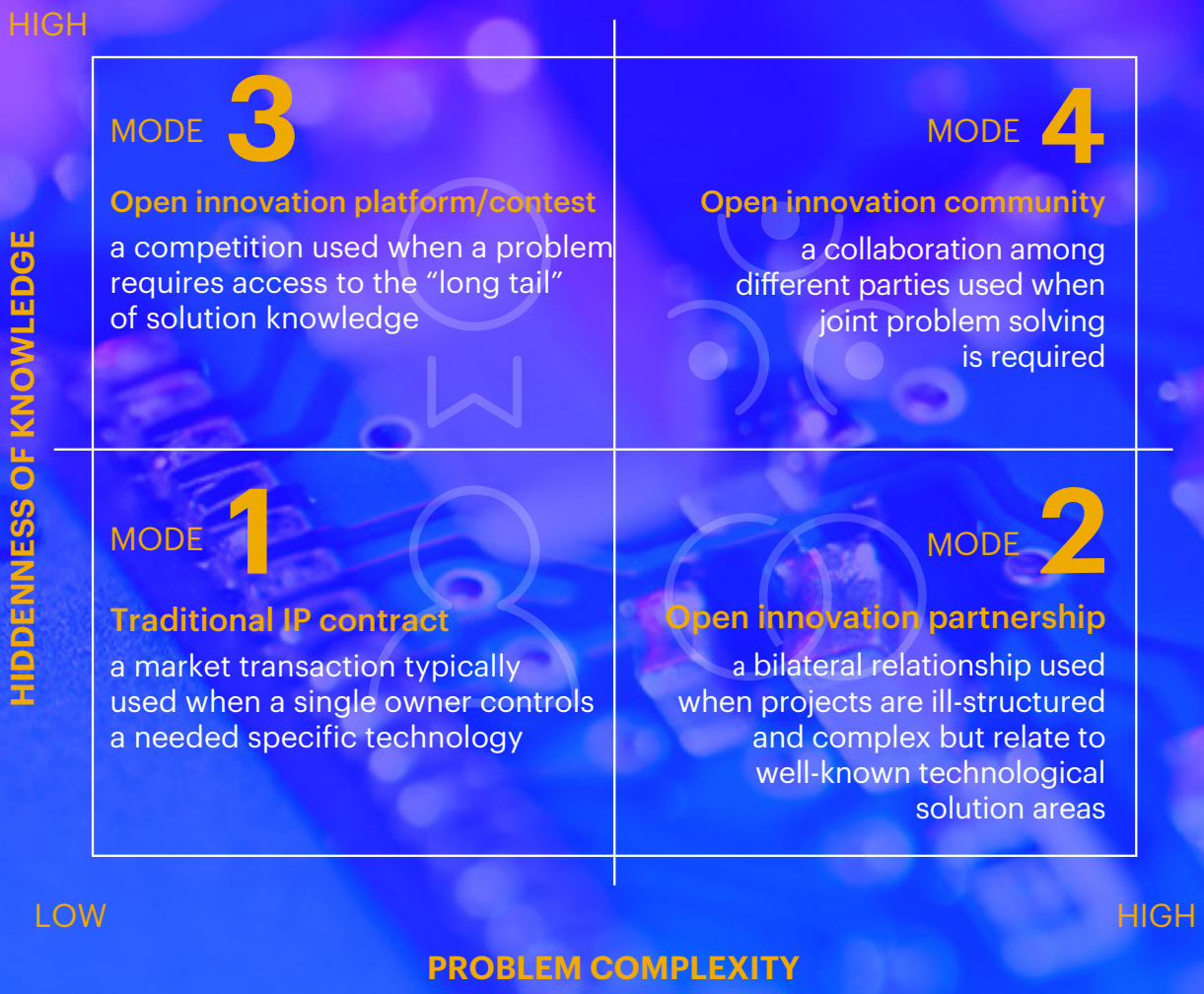
SCORING SUCCESSES

HP Labs' open innovation partnership led to a new offering—the Utility Rendering Service—that created tangible new value for HP. The company licensed the technology involved, and installed it in more than 100 movie studios. The service ultimately proved critical to the production of numerous animated feature films, including DreamWorks Animation's blockbusters Shrek 2 and Madagascar.

FOUR MODES OF OPEN INNOVATION

In our research, we studied the Research & Development (R&D) operations of several large corporations with headquarters in the United States and Europe.[1] These companies each had more than 1,000 employees and total revenues of at least US$250 million. We found that, to work with external parties to augment their internal R&D, these corporations have used four basic modes of open innovation:[2]



Source: Bagherzadeh, M. and S. Brunswicker (2015). Mix and match: Open Innovation Project Attributes and Optimal Governance Modes. World Open Innovation Conference 2015. Santa Clara, UC Berkeley; accessible via https://ssrn.com/abstract=2821203

[1] These four modes of open innovation were identified based on an analysis of more than 100 open innovation projects of large firms in the United States and Europe. This data collection was jointly executed by the Research Center for Open Digital Innovation and Haas School of Business, UC Berkeley. For more detail on this classification scheme see Bagherzadeh, M., S. Brunswicker et al (2015). Mix and match: Open Innovation Project Attributes and Optimal Governance Modes. World Open Innovation Conference 2015. Santa Clara, UC Berkeley

[2] For more detail on the study results read the report: Brunswicker, Sabine; Bagherzadeh, Mehdi; Lamb, Allison; Narsalay, Raghav; Jing, Yu. (2016). Managing open innovation projects with impact. Whitepaper. Research Center for Open Digital Innovation, Purdue University. West Lafayette, Indiana. www.purdue.edu/opendigital

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