OPEN INNOVATION AT HUAWEI TECHNOLOGIES

By Raghav Narsalay, Dr. Sabine Brunswicker, Mehdi Bagherzadeh and Jing Yu

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Networking and telecommunications innovator, Huawei Technologies, established a diverse range of collaborations to create an Internet of Things (IoT) cellular solution—in record time.

DEFINING THE OPEN INNOVATION CHALLENGE

China-based Huawei Technologies Co. Ltd excels at developing networking and telecommunications equipment and services. The company was well positioned to take advantage of the growth of machine-to-machine services in China, following the nation's decision to invest in extensive Internet of Things (IoT) capabilities. Huawei's executives knew that their key clients—Chinese telecommunication operators—would demand low-power, low-cost, high-quality, and high-coverage solutions for the emerging IoT market before 5G mobile telecommunications technology was fully commercialized in China. To serve these clients, Huawai decided to craft its own interim IoT cellular solution, a 4G specification developed for machine connectivity—which it dubbed LTE-M.[1] Initiated in 2013, the project had arrived at a crucial milestone: the standardization of technology and hardware before commercial launch.

Success hinged on developing suitable standards for the LTE-M mobile technology. Huawei needed to make sure that major suppliers involved in the production of different components of LTE-M were ready for those standards before the commercial launch. The work would be highly complex and Huawai recognized it must involve numerous diverse businesses.

[1] Long Term Evolution–Machine to Machine.

CHOOSING AN OPEN INNOVATION APPROACH

Owing to the complexity of the challenge at hand, Huawei selected an open innovation approach centered on collaboration with a number of diverse industry partners. These organizations ranged from mobile service operators and chip and handset manufacturers to telecommunications' equipment providers and module manufacturers.

To transform these ecosystem partners' expertise into a state-of-the-art offering for its clients, Huawei determined to involve them in all key stages of the LTE-M project, including design, development, and prototyping.

Although this involvement was a sound proposition, orchestrating the efforts of so many different companies was far from simple. To make the partnerships work, Huawei needed to keep all its collaborators motivated, gain a clear line of sight into what each company was doing on the project, and constructively manage the conflicts that inevitably arise as a result of any partnership.

MAINTAINING MOTIVATION

In such a fast-changing industry, Huawei needed to understand how it would motivate all of its collaborators to remain committed to the project—to keep investing time, effort and other resources—as it progressed. As one executive at Huawei commented, "In an industry with a low shelf life for technologies, it's very easy for somebody to lose heart and suddenly think of leaving the journey midway."

To sustain collaborators' motivation and commitment, Huawei focused considerable time and resources to identify companies with shared or similar interests. It forged partnerships only with those organizations that shared the LTE-M project's commercial vision.

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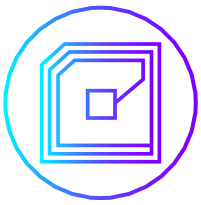
These solid foundations paid off: The partners that Huawei ultimately chose quickly developed a deep understanding of the commercial problem at hand and demonstrated a willingness and ability to amicably resolve any disputes that arose, rather than showing initial interest in the project but losing enthusiasm down the line.



GAINING A FRONT VIEW OF THE ACTION

Each of Huawei's LTE-M collaborators was working on its own premises, using its own employees and innovation infrastructure. This level of separation could have made it hard for Huawei to see what each company was doing to support the project. Without clear visibility into its partners' actions, it would have been difficult for Huawei to control the entire process and complete the project within the timelines.

To overcome this challenge, Huawei had its own LTE-M teams maintain ongoing contact with their counterparts at each collaborating company. These interactions enabled Huawei to learn more about each partner's work and to keep all the partners focused on goals defined for each stage of the LTE-M project. In addition, staying in close contact with its partners helped Huawei to recognize when collaborators were having difficulty channeling resources across each stage of their innovation process.

DIFFUSING INEVITABLE TENSIONS

In any partnership, conflicts are bound to arise. Disagreements over intellectual property (IP) ownership as a project comes to fruition are just one example, along with tensions over how best to solve technical and other problems.

Given that each partner in the LTE-M effort was essential to the project's success, Huawei needed to ensure that any disputes were resolved constructively. To that end, it designed a problem-solving process centered on customers' needs.

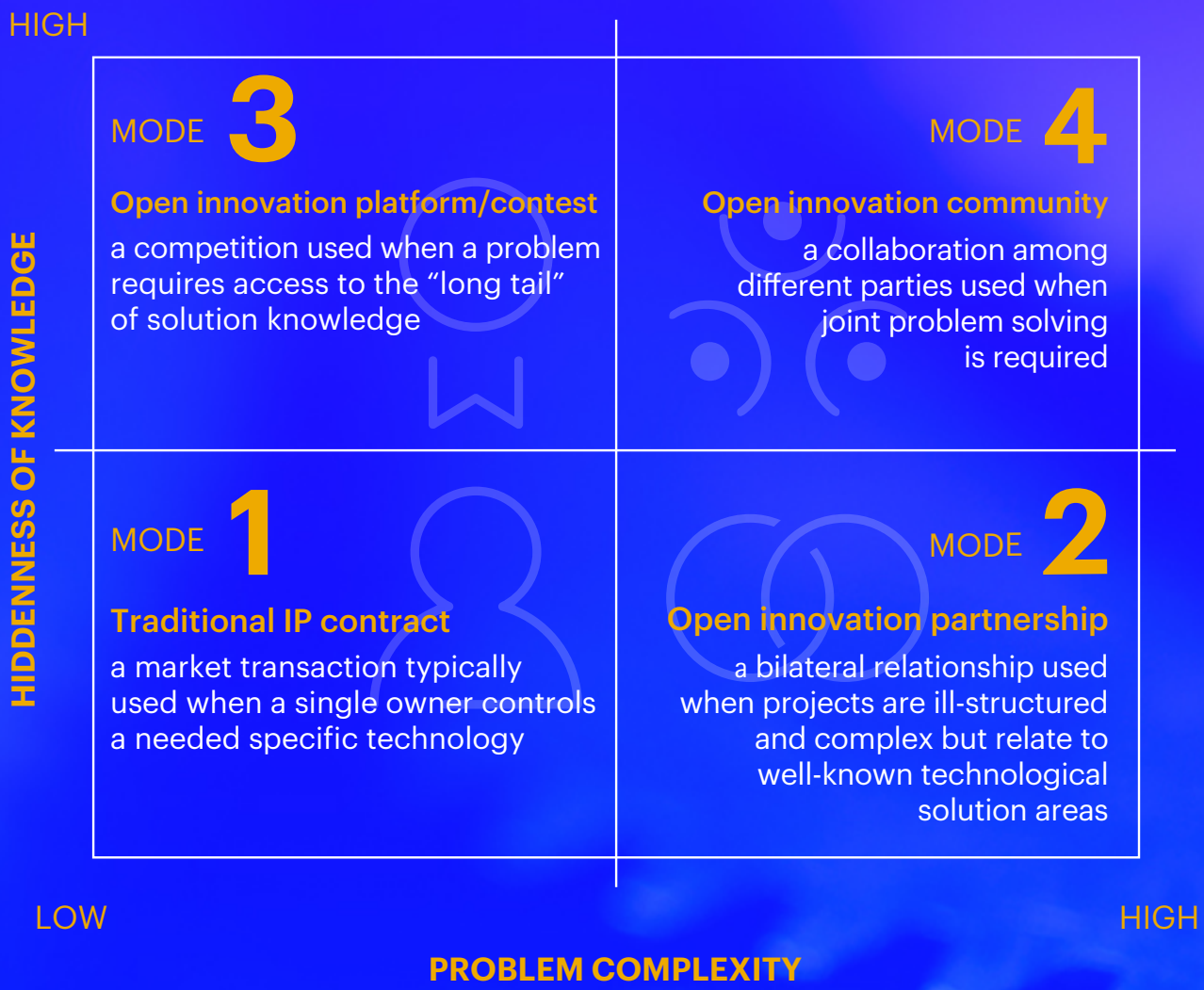
For instance, Huawei asked the mobile telecommunications operators in the group to identify technical and other problems that they thought might arise following the introduction of the new technologies being developed as part of the LTE-M project. Huawei then facilitated focused discussions among them to brainstorm solution ideas. The result was a clear understanding of the nature of these problems, the generation of more solution possibilities and swifter identification of the best possible solutions. As an additional benefit, Huawei gained further visibility into partners' work on the project, without having to exert formal authority.

SCORING SUCCESSES

Huawei's disciplined approach to managing its network of open innovation partners proved highly effective. Thanks to its careful orchestration of the collaborative effort, Huawei was poised to introduce its new technology after just three years—a good two years faster than if the company had developed the technology on its own.

FOUR MODES OF OPEN INNOVATION

In our research, we studied the research and development (R&D) operations of several large corporations with headquarters in the United States and Europe.[2] 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:[3]



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 SSRN https://ssrn.com/abstract=2821203

[2] 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.

[3] 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

Authors

Raghav Narsalay
raghav.narsalay@accenture.com

Dr. Sabine Brunswicker
sbrunswi@purdue.edu

Mehdi Bagherzadeh
bmedhi@purdue.edu

Jing Yu
jing.yu@accenture.com

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