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OPEN Innovation's Common Issues and Potential Roadblocks

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All too often my conversations with product development professionals turn towards open innovation. Even though they are excited about open innovation they still express many concerns with implementing it in their own companies. Being Ph.D.s in Innovation Management we felt obligated to help. Hence, the following paper was created to help upper managers understand the common issues and roadblocks with implementing open innovation.

To start, open innovation has three different core uses all of which are very effective. Many companies pick one core use for open innovation even though all three are possible simultaneously. The core uses are: generating ideas for new products or services, solving technically vexing problems, or performing co-development of new products or services. The following examples exemplify the employment of these practices.

1. Generating ideas for new products or services. Top management at Proctor & Gamble realized the number of new product ideas needed in order to continue growth at the expected rate placed an untenable burden on their R&D departments. Their solution? Supplement internal R&D with an open innovation model sourcing new product ideas from the entire world.

2. Solve technical problems that are vexing or too complex to be solved internally. The specialty-card maker, Hallmark, saw the future of cards as being more interactive and fun. An internal champion moved to develop musical cards, but Hallmark did not have the internal technical expertise to create or even manufacture these cards. Using an open innovation model Hallmark found a technical partner and worked with them to develop the ideal technology for their low cost audio card series.

3. Co-development of difficult products, services, processes, technologies, etc. Boeing Company uses large-scale partnerships to bring together complex components and systems, from jet engines to cockpit electronics, to create their next generation of jet aircrafts. These partnerships allow Boeing to combine their development resources and capabilities with that of other best in class suppliers, while simultaneously spreading financial burdens and risks among their development partners.

Issues & Potential Roadblocks to Open Innovation

The following section lists the major (as currently identified) downsides and roadblocks to open innovation. This list is short, but it represents up-to-date knowledge taken from top books, articles, and leading practitioners.

Internal Buy-In

As with most programs, internal buy-in is necessary for continued success; however, full internal buy-in is not necessary to start an open innovation program. Dr. Philip Kotter's articles on change management discuss creating a guiding coalition with people passionate about the proposed change. Dr. Kotter recommends using quick wins to prove the value of the change throughout the company. In simple applications open innovation can be applied to a single project. Then after the project is successful, its results can be used as proof to motivate other managers to join the efforts. Actually, this is exactly what an executive at Sealed Air used to push open innovation throughout his company.

Establishing Trust with your Open Innovation Partners

In most cases open innovation partners are small entities; for them "large businesses" are both innately scary and untrustworthy. Companies pursuing open innovation need to develop a reputation as a "trusted partner" and be seen as a viable path to market. Staples Corporation is a great example of how to engage small partners. To reach out to inventor groups, Staples sponsored events and openly discussed small entities' intellectual property rights. To ensure trust was built and maintained, Staples actively managed these new relationships through open communication.

Companies can increase their trust with the open innovation partners by being honest, avoiding activities that can be construed as leveraging their size and power, and by avoiding overly aggressive negotiations.

Trust is also built through prompt and clear communications. Providing open access to all open innovation officers is a must. Proctor & Gamble worked to establish trust via keeping partners up-to-date on developments; one month without an email or phone call is un-acceptable. Lastly, legal contracts are only brought in after a confirmed understanding of many issues is reached (like IP ownership). Many firms suggest that to encourage innovation and increase the number and quality of ideas generated, that lawyers be excluded from initial ideation conversations.

Intellectual Property

Intellectual property ownership is one of the most complex problem areas within open innovation mainly because it can be so central to the future success of a project. Corporate lawyers know this and always err on the side of full ownership and limited disclosure for any IP generated with outside partners. However, open innovation does not mesh with their perspective because open innovation requires a fair split of IP ownership based on myriad measures, be them: contributed capital, contributed time and resources, the vital nature of a partner's capabilities, etc. Remember, open innovation is a partnership and both parties must be fairly rewarded for their inputs. Often some degree of IP ownership or joint ownership is enough to bring a strong partner onboard. There are two general blocks related to IP and they are the:

- a) Corporate lawyer blocks
- b) IP category blocks

Corporate Lawyer Blocks

The core beliefs of corporate lawyers conflict with the open innovations partnership model. A Philips Lighting's executive suggested **not** bringing any lawyers into the agreement process until both parties reach a common oral agreement. Interestingly, this same executive was a patent agent and drafted his own partnership agreements. After drafting, his executive friend in the legal department signed off on the agreements; hence, his close relationship gave him the required buy-in from the legal department.

IP Category Blocks

The classes a company's IP fall into greatly affect its ability to conduct open innovation. IP can easily be broken up into four classes (see Appendix A for more details). Companies in **IP Class 1** deal with products and services that have little value in patent protection. Consequently these companies can operate an open innovation program without much concern for IP blocks.

Companies in **IP Class 2** are those that can benefit from patents and trade secrets but generally do not require them to operate competitively. These companies should pay some attention to IP but not too much.

Companies in **IP Class 3** require IP to compete in their industry; here structured IP contracts are necessary for all types of open innovation. Gathering ideas from the open innovation community becomes very difficult because of IP concerns on both sides. Finally, companies in **IP Class 4** are weapons or defense contractors and **can not** disclose IP or trade secrets due to national security laws. Gathering ideas in this context must be done through structured government programs (STTR & SBIR), and all potential partnerships must be approved by their respective government agencies.

Payment Systems

Open innovation partners are in a sense a supplier, but because they are often small entities which are frequently untrusting of large companies they often do not mesh well with large companies' typical payment processes. The story below is from an Executive at Sealed Air's.

'I was surprised that a huge bottleneck in our open innovation program was our own accounting department! Having to wait 45 days for payment, several of our open innovation partners both refused and were unable to complete work because of their limited funds. I ran around trying to get a check cut to them; finally I used my own department's accounts to pay them so their work could continue. Luckily, later that year accounting made a special process just for our open innovation partners. This way we could pay within days of their achieved milestones and keep work flowing.'

Communication

Communication is a central capability in finding, evaluating, and working with open innovation partners. Hence, open innovation requires 1) a set of open communication channels, 2) people who are communicators and connectors, and 3) an open communications mindset.

Firstly, an open innovation program requires a public webpage directory of your company's open innovation officers with their direct phone numbers, emails, and addresses listed freely. Closing contact to your open innovation officers via unlisted phone numbers, layers of secretaries, voice menu systems, and spam blocked emails are the best way to dissuade interested outsiders from contacting you. Further, open innovation web portals, created as a sub-domain, are a smart and easy way to communicate with open innovation partners.

Secondly, an open innovation officer must be a communicator and connector, think of the best networkers in your company who are available at any hour, who love making new connections, and always gets back to you promptly. Do not pick an introverted engineer who has the 'black hole email address,' seems like he never answers his phone, or always excuses himself from failures in communication because of his workload. Unfortunately, sometimes these introverts are your best engineers, and except for their lack of networking abilities, would have otherwise been a top choice. Nonetheless, err on the side of choosing a networker versus an all-star engineer, as technical problems can usually be resolved later; whereas, losing potential partners due to lack of communication is very costly.

Finally, an open innovation department must have a mindset based on a deep desire to connect and communicate openly with the outside world. They should also believe that being proper, active, and trustworthy in their communications is a key to their success.

Clear and Stated Agreement Established at the Beginning of the Relationship

Confusion about IP ownership, contributed resources and time, communication requirements, and rewards can break the bonds of trust between open innovation partners. Any of these problems can kill the relationship. When working with your open innovation partners, establish a clear understanding and agreement on these vital issues. It is reasonable to spend many hours reaching an oral agreement on these matters before signing a single paper document. According to the GE Lighting Executive this "upfront work" is well spent as it creates stronger bonds with the open innovation partners. Short cutting this process, even for small partners, will invite failure. Repeat confusion and breaches of trust could result in others labeling your company as a poor or untrustworthy open innovation partner.

Clear, Descriptive, and Motivating RFP

RFPs (request for proposals) communicate corporate needs to the open innovation network. RFPs should contain the usual sections and additionally should provide information about the opportunity areas and background of the project. The problem statement should be very clear and provide detailed data and information, like numbers, values, temperatures, pressures, stresses, desired cost levels, and so on. Well-written RFPs contain as much information as possible without disclosing vital trade secrets. Do not worry about disclosing opportunity areas or interest areas, because with this information in-mind open innovation partners can submit solutions more relevant to such an opportunity. Remember, RFPs that draw the submission boundaries too tightly miss the opportunity to catch other relevant solutions and ideas. Finally, make the RFPs easy to read (ex. put a short

summary at the beginning) and make them attractive so your open innovation partners are motivated to respond. To further motivate potential partners to spend time on your proposal, consider including information about possible financial rewards for fulfilling the RFP.

Limiting Participation

Large and prominent companies may receive more responses to an RFP than they can effectively process. In this case, it may be more work examining the proposals than actually doing the project itself. For very attractive projects, one can pre-qualify open innovation partners via short questionnaires or internal screening. Then, send out the RFPs to this smaller pool of qualified partners. If no subsequent proposals meet your requirements widen your pre-qualification criteria or remove them all together.

Unfocused Open Innovation Programs

Open innovation has many possibilities. It is easy to become unfocused and "go off in any direction." The success of an open innovation program always benefits from quick wins. The best way to achieve quick wins is to gather needs from key company figure heads and create a wish list of clear wins. If you can meet one of these wishes, you will have gained a strong ally in your efforts to promote the open innovation program.

First, create a wish list for your core areas of use. Companies using open innovation to generate ideas would have a wish list consisting of idea interest areas (like the intersection of advanced antimicrobial metals and air-conditioner technologies) or opportunity areas which would hold great potential; such as new coolants for air conditioners, or a new agent that can be applied to any surface yielding it permanently antimicrobial, such as with COEUS Technologies.

Second, companies using open innovation to solve vexing technical problems should have wish lists organized by technical problems that, if solved, would create high value solutions or allow high value products to be created. This list is organized by highest to lowest value technical problems.

Finally, companies conducting co-development should have wish lists organized with valuable new capabilities or valuable new resources. So for example, in air conditioners the ability to integrate the Wi-Fi into the control of an air conditioner is a valuable new capability.

Unknowns

New research and discoveries on open innovation are constantly emerging; there is still a lot to learn. For example, researchers are in disagreement as toward the amount of impact "company culture" can have on open innovation efforts. Some argue that 'not invented here syndrome', being 'untrusting of outsiders' and tight lipped policies against any disclosure block open innovation, yet others argue those can be quickly changed in-relation to an open innovation program. Hence, keep searching for new research on knowledge on open innovation. Nonetheless, be aware of these potentially cultural

barriers within your organization. An awareness and preemptive strategy for incorporating open innovation practices within an organization can go a long ways towards success.

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If you would like my future papers or presentations, please email me and I will place you on my mailing list for future materials! Dr. Brian Glassman

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APPENDIX A

IP Classes

An important part of open innovation is understanding what class a company's IP may fall into:

IP Class 1 – Typically not patentable; too simple to be a trade secret

IP Class 2 – IP can be important but on average it is not, patents and trade secrets may be appropriated

IP Class 3 – IP is vital for success, should be patented or kept as a trade secret

IP Class 4 – IP legally can not be leaked due to national security concerns; kept as only a trade secret

Class 1 typically consists of very common categories of new ideas, such as table cloth designs, footstools, staplers, simple recipes, theories, and books. This class is generalized as being un-patentable due to most ideas in this category having been based on information which is public knowledge. More importantly, companies typically do not seek patents or trade secret protection on this class of IP because of the limited benefits of doing so. In this class, copyrights are more predominate from of protecting the exact designs or artistic work, but like many copyrights, they are easily circumvented.

Class 2 typically consists of companies which do not require patentable inventions or trade secrets to compete, however if they are created they can be valuable. Hence, IP should not be ignored but on average these types of patents do not play a significant role. However, in some cases it may be advantageous to patent or keep something as a trade secret. A company may desire a new combination for processed foods, exterior designs of tables, etc., to be patented or at minimum covered under design patents. A process such as 'how to create a specific paint pattern on a boat hull' may also be valuable as a trade secret due to its rarity, more so than its ability to keep competitors from entering the market.

Class 3 consists of patents and trade secrets which are a vital part of success in a particular industry. Industries such as micro-processors, electronics, construction equipment, etc., rely on vital patent portfolios and company trade secrets to maintain their competitive advantages. Gathering ideas/inventions from open innovation partners must be done carefully and in a calculated manner to be effective; while this is one of the hardest classes to gather ideas for, it can still be done effectively.

Class 4 consists of national security-type IP, and pertains mainly to weapons developers and defense contractors who by law can not patent their technologies or disclose their information to outside parties due to strict governmental regulations and associated penalties. All vital information is kept as trade secrets, and thus contractors are forced to abide by strict national non-disclosure laws. External idea generation is mostly done in a government managed system through programs such as STTR or SBIR. Companies can also place their organization in this class if they can make the case that failure to maintain trade secrets or proprietary IP would result in an overall company collapse.

Unfortunately, being in IP class 3 & 4 greatly limits a company's ability to use open innovation to gather ideas from outside entities (core use number 1). Thus, companies in these classes should look to using open innovation to solve vexing technical problems, or use open innovation to conduct co-development to spread risk and lower investment amounts, or use open innovation build new technical capabilities.

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