Why Large Organizations Depend on External Innovations for Growth

White Paper

aranca

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Section 1 – Introduction

The world is evolving rapidly with the introduction of new, disruptive and incremental technologies on a daily basis. Organizations across the globe must adapt to changes if they do not wish to be left behind in the race. Adopting innovative technologies is important to keep up with the dynamic technical ecosystem. Earlier, companies were focused inward for fresh ideas and concepts. However, now they are looking outside to tap transformational technologies and benefit from the ideas of out-of-box thinkers with a futuristic outlook. Innovating is crucial to stay ahead of the curve and enjoy competitive edge, something that would come from embracing external innovations.

Sourcing external innovations is not easy. This paper looks at the various channels companies adopt to access innovations. Some companies even have organizational structures especially designed to manage external innovations.

This paper provides an in-depth analysis on innovation scouting and its various types, defines a relationship between VCs and open innovations, and gives a checklist for companies.

This paper will be useful for:

- Companies looking at avenues to adopt external innovation
- Startups looking for funding and options to grow
- Companies keen on exploring innovation scouting

Section 2 – Channels Adopted by Companies

TRADITIONAL

Mergers and acquisitions

Mergers and acquisitions have long been a successful route to adopt external innovation. However, the process is slightly long drawn as technology to be adopted and alignment of business strategies is essential for success.

Examples:

Collaborations

Sometimes companies from completely diverse sectors come together to collaborate and bring forth a new technology, beneficial to both sides.

Examples: Microsoft   Ford

Academic Partnerships

Companies cooperate with universities and academia to fund their studies and research. This gives the organization first-hand experience in the development of a new innovative technology or idea.

Examples: EVONIK POWER TO CREATE   UNIVERSITÄT DUISBURG ESSEN *Offen im Denken*   IBM

RECENT

Funding startups

Startups experiment with new technologies to add business value. Corporates provide funding to get first-hand access to their technology and profit from its commercialization.

Examples: SoftBank Group   TIGERGLOBAL

Trend scouts

A dedicated team of external scouts undertake scouting and monitoring of startups/new technologies which, in turn, helps corporates to collaborate. This needs certain expertise and technical knowledge.

Examples: Lucent Technologies Bell Labs Innovations   CISCO

External crowds and communities

Innovation communities are attractive to corporations keen on accessing certain innovative technologies, skills and activities.

Examples: at&t   KICKSTARTER

Open innovation platforms

Open innovation platforms encourage interaction between individual scientists/inventors and large companies. This gives an opportunity to scientists to monetize their innovation.

Examples: Omnexus *The material selection platform*   BRIGHTIDEA
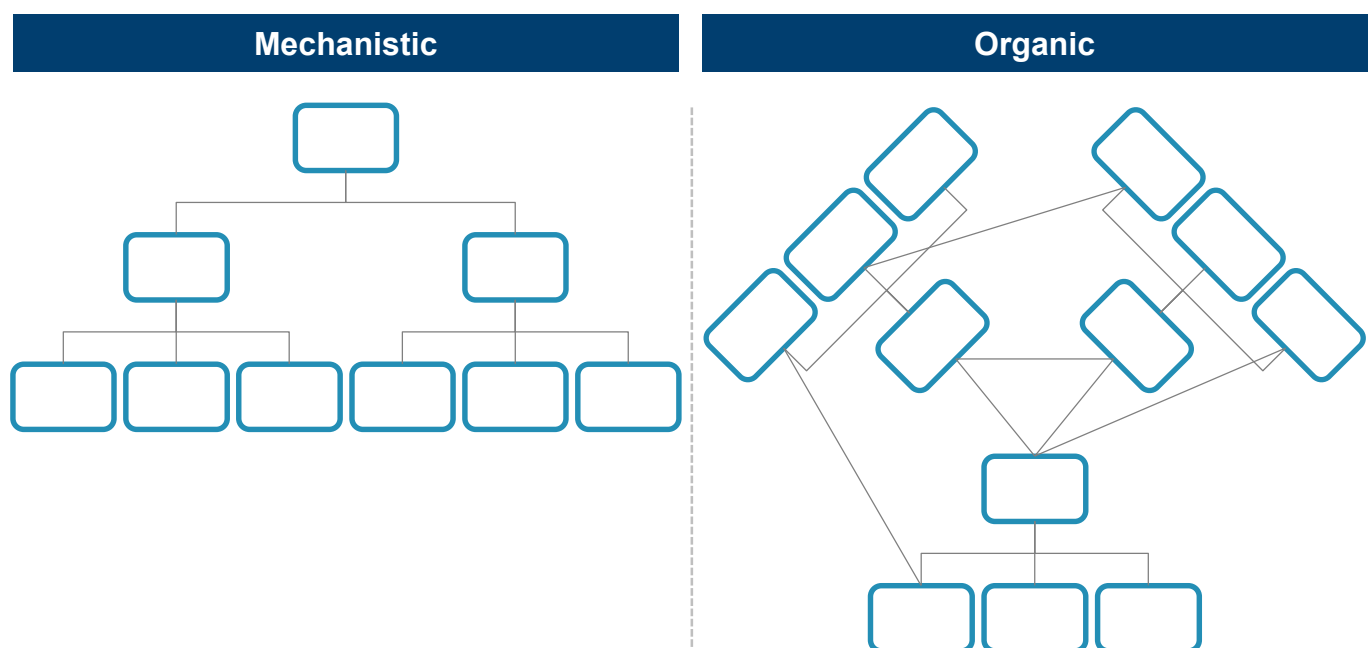
Based on its business, investment outlay and long-term objectives, an organization chooses a channel for accessing external innovations. However, the success as well as time taken to implement and integrate these processes depends on various aspects. Also, the time for impact and results varies from company to company. The table below lists the factors considered while adopting a channel and the time taken to create impact and generate return from investments.

Shorter → Longer

Time taken for financial impact

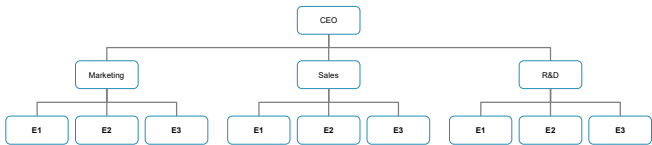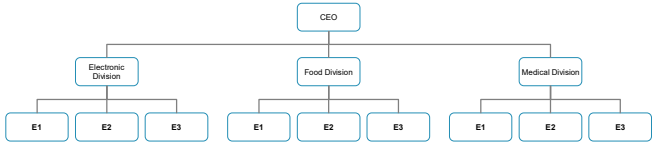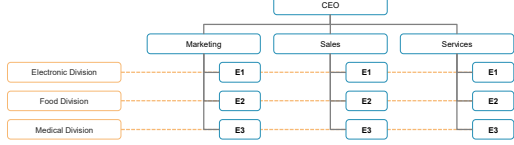| Tool	Mergers and acquisitions	Collaborat-ions	Funding startups	Trend scouts	External crowds & communities	Open innovation platforms	Academic partnerships
Rationale	Easy access to knowledge and resources from both organizations	Quick access to a particular innovation, easy access to knowhow	Considerable time taken to scout for appropriate startup Willingness of startup to get funded	Time taken to hire scouts Additional time for the scouts to identify innovations Considerable time taken by companies to adopt innovation	Long time taken for companies to obtain the targeted innovation/technology	Long time taken for companies to obtain the targeted innovation/technology	Encourage activities in fundamental research
Financial Benefits	Short term, mid term & long term	Short term, mid term & long term	Mid term & long term	Mid term & long term	Long term	Long term	Long term

Section 3 – Organizational Structure

Though companies across sectors have understood the need for external innovations, adopting and implementing the technology is time-consuming. One of the key reasons behind this is the structure of the organization. Organizations with complex structures find it difficult to access innovations in a speedy manner. In a simplified and streamlined structure, it is easier for people across layers to ramp up their activities and obtain approvals.

To speed up the integration of external innovations, different types of R&D structures have been developed, such as ethnocentric, geocentric, polycentric centralized, decentralized and cooperative. These structures have been clubbed into mechanistic organizational structure and organic organizational structure. The structures operate/collaborate along two main alliance modes: vertical integrated and horizontal integrated. The capability of various firms to learn, enhance and adopt newer innovations and knowhow depends on their R&D organizational structure.

Mechanistic	Organic

Mechanistic structure is more formal than organic. Specific standards and practices govern every business decision. However, it has been observed that this type of structure is restrictive and hinders the creativity, flexibility and agility an organization needs to keep pace with random technological changes in the domain. Organic structures are less formal, allowing spontaneity, which is particularly helpful for businesses in fast-moving sectors. This structure empowers employees to innovate and develop, and strengthens the organization in the long run.

The table below lists the organizational sub-structures companies adopt for smoother transitioning, easy access to external innovations, and to boost growth.
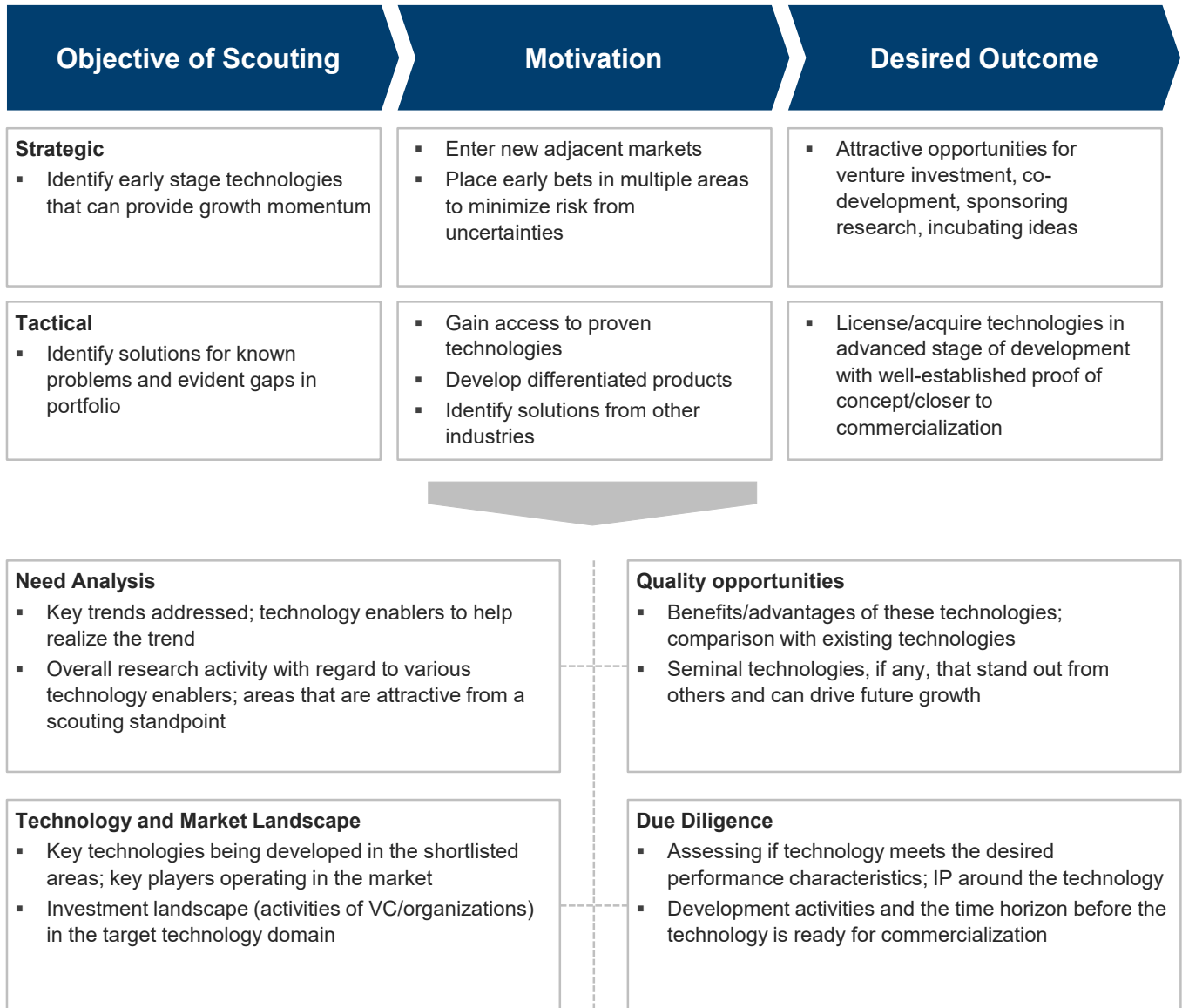
Type of Structure	Structure Image	Advantages	Disadvantages
Functional		▪ Employees can gain expertise ▪ High scalability	▪ Stunts employee development ▪ Requirement for different teams, not cost-effective
Product-based Structure		▪ Reduces product development cycle ▪ Go-to-market is faster	▪ Difficult to scale ▪ Duplication of resources likely
Process-based Structure		▪ Increased speed and efficiency ▪ Easily adaptable	▪ Task allocation difficult ▪ Communication gap between business subgroups
Matrix (Dual reporting)		▪ Agile ▪ Smooth decision making ▪ Ease of adoption ▪ High employee engagement	▪ Complicated structure ▪ Can lead to confusion and conflict
Circular		▪ Easy communication and seamless flow of ideas	▪ Can be confusing

Though the decision of structuring an organization largely depends on the nature of business, location and mix of employees, an organic structure such as Matrix or Circular would be the best choice for organizations looking to grow through external innovations. These structures promote free flow of information, and are less formal. Therefore, it takes relatively less time to obtain approval which, in turn, helps companies to quickly adopt technologies. However, there are certain checks an organization must do before structuring or re-structuring processes to facilitate the adoption of external innovation. An exemplary list of questions that should be answered is:

▪ Will adopting the structure simplify internal business processes?

▪ Will the structure boost innovation and instill confidence in employees?

▪ Is the structure more cost-effective than the traditional one?

▪ How quickly can external innovations be adopted in products/processes?

▪ Are there any bottlenecks in the structure?

Section 4 – Types of Innovation Scouting

Innovation scouting refers to the process of identifying upcoming and new technologies. Based on the objective, an organization strategizes its trajectory to scout for various innovations. The table below provides a snapshot of the objectives, motivation and outcome of the process.

Objective of Scouting	Motivation	Desired Outcome
Strategic ▪ Identify early stage technologies that can provide growth momentum	▪ Enter new adjacent markets ▪ Place early bets in multiple areas to minimize risk from uncertainties	▪ Attractive opportunities for venture investment, co-development, sponsoring research, incubating ideas
Tactical ▪ Identify solutions for known problems and evident gaps in portfolio	▪ Gain access to proven technologies ▪ Develop differentiated products ▪ Identify solutions from other industries	▪ License/acquire technologies in advanced stage of development with well-established proof of concept/closer to commercialization

Need Analysis
- Key trends addressed; technology enablers to help realize the trend
- Overall research activity with regard to various technology enablers; areas that are attractive from a scouting standpoint

Quality opportunities
- Benefits/advantages of these technologies; comparison with existing technologies
- Seminal technologies, if any, that stand out from others and can drive future growth

Technology and Market Landscape
- Key technologies being developed in the shortlisted areas; key players operating in the market
- Investment landscape (activities of VC/organizations) in the target technology domain

Due Diligence
- Assessing if technology meets the desired performance characteristics; IP around the technology
- Development activities and the time horizon before the technology is ready for commercialization

There are various options for technology scouting under both strategic and tactical routes. The process depends on several parameters such as the organization's business line, technological trend in the industry, time allotted for return on investment, objective of adopting the innovation, etc.

The options are depicted below:

Strategic	**Tactical**
Technology Scouting	**Product Scouting**
Scouting for new technologies that are coming up in the market, disrupting various industries	Searching for new products and associated technologies which can fill in an unmet need in the market
Example: *Scouting for continuous laser cutting technologies*	*Example:* *Identifying products to recycle plastics, identifying bio-degradable beverage pouches*
Start-up Scouting	**Technology Landscape**
Identifying a fledgling startup with a higher potential	Providing an overview of various technologies in the domain for addressing a particular problem
Example: *Startup identification exercise in the domain of 5G technology*	*Example:* *Technology landscape on smart glass*
University Scouting	**White Space Analysis**
Identifying universities active in a particular technology domain and with a track record of producing scientists and geniuses	Identifying various white spaces in the technology area which could provide new opportunities for R&D
Example: *Identifying universities in the domain of energy management systems*	*Example:* *Identifying novel bearing material compositions which could be feasibly developed*

The ease with which either of the options listed above can be adopted also depends on an organizational structure. Where the corporate venture capital (CVC) arm is a separate segment or entity, it is easy for a company to embrace external innovations through the strategic route. On the other hand, for an organic organizational structure, the tactical route would work better. Thus, if an organization has a CVC arm and an organic structure, it can easily adopt external innovations through both the routes.

Section 5: Corporate VCs, Open Innovation and Technology Teams

CVC is a form of venture capital where corporate funds are directly invested in external companies or startups. In larger companies, the management of CVC funds and investment decisions are handled by specialized divisions, such as GV for Google and M12 for Microsoft. These divisions track the progress of new startups to identify attractive opportunities and also closely observe the performance of existing startups.

With rapid digitization, companies across industries are recognizing the importance of constant innovation. CVC investment as a share of total VC investment is rising slowly yet steadily. In 2017, it was approximately 26% of total VC investments. These investments have given profits, with more than 95% of CVCs reporting positive returns.

Companies across industries have successfully implemented CVCs and benefited. Some examples are:

1. **Agri Business**

   - **Monsanto Growth Ventures** – The CVC arm of Monsanto Company invests in R&D for technology-based solutions and agricultural products that improve farms' productivity and food quality. The objective is to help nascent companies grow by leveraging Monsanto's agricultural knowhow and resources.

   - **Syngenta Ventures** – The CVC unit of Syngenta invests in the research and application of science to develop crop protection products and seeds. It is also working towards minimizing the use of limited natural resources.

2. **Chemicals**

   - **Dow Venture Capital** – This CVC arm of Dow makes investments with the objective to boost the growth of the parent company. It has funded startups in various sectors such as consumer goods, infrastructure and packaging.

   - **BASF Venture Capital** – A part of BASF Group, the company invests in young enterprises, facilitating their access into new markets and customers. It focuses on chemistry, new materials and sustainability, digitization and new business models.

3. **Pharmaceuticals**

   - **Pfizer Venture Investments** – Founded in 2004 by pharmaceuticals major Pfizer, the company invests in the parent company's current or future strategic interests. The CVC arm constantly monitors advances in life sciences, identifies and invests in emerging companies engaged in developing new compounds and technologies. The main aim is to enhance and broaden Pfizer's product suite.

   - **Sanofi-Genzyme BioVentures** – This VC firm invests in life sciences companies. The investments are aligned with Sanofi's area of business interests.

4. **Medical Devices**

   - **BioStar Ventures** – This is the CVC arm of medical device company, BioStar; it invests in disruptive cardiovascular and orthopedic medical devices. So far, the firm has helped 18 of its portfolio companies become successful.
   - **Johnson & Johnson Innovation** – The CVC unit of Johnson & Johnson, it focuses on the development and advancement of new healthcare solutions and is not limited to medical devices. The division also invests in pharmaceuticals, consumer products, and diagnostic devices.

5. **FMCG**

- **Unilever Ventures** – This venture capital and private equity arm of Indian company, Unilever, invests in young companies, providing them access to Unilever's global ecosystem, assets and expertise. It focuses on personal care products.
- **CECS Ventures** – This RP-Sanjiv Goenka Group Company, plans to invest in the FMCG industry. It has already invested in skin and hair care product development.

Analysis of CVCs across sectors reveals that:

- Companies invest in newer concepts or concepts which are in line with their main business.
- In certain sectors, they invest in adjacent business lines but in the same industry.

Open Innovations & Technology Teams

Open innovation is an effective medium to tap the vast knowledge in the market today. By combining internal and external ideas and integrating paths, it contributes to the growth of new technologies and ideas.

Open innovation allows both inflow of outside knowledge to the company and outflow of underutilized ideas (outbound open innovations). The ideas flowing in are in line with the company's business model and, therefore, would contribute to its growth. It is the key element in deciding which ideas are filtered in.

Multiple external sources are used in open innovations, such as feedback from customers, published patents, competitor insights, and external research agencies, to drive innovation.

Examples of companies that have successfully adopted open innovations:

1. **Philips** – Philips established Philips High-Tech Campus in 1998. It is now known as High- Tech Campus, Eindhoven as it later allowed technical universities and other companies to join in. Knowledge and insights from experts in various fields sparked off many new technologies. It allowed Philips to offer new products, from electric shavers to kettles. Philips also has an open innovation lab, MiPlaza, where companies can access Philips' research and knowhow to develop new applications. Philips has the right to use these inventions.

2. **Netflix** – In 2006, Netflix ran a contest, Netflix Prize, open to the public. It was to design a filtering algorithm which would improve a user's movies or series suggestions by 10%. The contest received 40,000 entries and the winner's algorithm was used by Netflix. Though the entity has not done a similar activity again, following this event, it did use open innovation successfully and gained from it.

Most companies have a technology team today. This is an internal expert team which manages the company's technological assets and works on innovative ideas to develop solutions and offerings in line with the company's short, mid and long-term objectives.

This team is usually aware of various technological advancements and innovations across industries which ensures that the company does not fall behind in implementing latest advancements. It accesses data across the organization, from different teams, to identify and implement tools that deliver meaningful analysis and reporting.

Every company needs a technology team to promote innovation and growth.

CVCs must work in collaboration with tech teams for better results. Going forward, it appears that CVCs will be in charge of all technology-related aspects such as:

- Competition mapping in technological landscape
- Integration of new innovations in the company's processes
- Adoption of new technologies in the industry

Section 6 – Factors Critical To Success

1. **Avoid conflicting mandates** – In an organization, each tasks related to external innovation must be handled independently by separate teams. For example, a CVC must focus on identifying start-ups, while the tech team's activities must revolve around scouting for emerging technologies within the domain. If the organization has an R&D team in-house, the team must concentrate on in-house research and search for new technologies at a TRL 3 level. Hence, an organization must avoid any overlapping mandates across the various units, such as open innovation, CVC, and R&D, and define the scale and type of targets for each division.

2. **Do not mix technology scouting with other external innovation processes** – A process that could be a best practice strategically may not be the most technologically advanced approach to find solutions to a problem. An organization scouting for technology must understand the need for it and its final application. This would help in correctly identifying the technologies the organization may want to adopt and fund. It should not be a part of other external innovation processes that the company might be utilizing, but a separate activity altogether.

3. **Keep university engagement separate from scouting** – Engaging with universities must be kept separate from funding and scouting activities. It is an ongoing R&D activity solely for the company's growth and must be treated differently.

4. **Adopt the right organizational structure** – This is as important as the skilled professionals required to develop an innovative idea or product. The structure must support innovation and facilitate adoption of new technologies and processes.

5. **Metrics and incentives –** An organization must have metrics to track the progress of ideas, startups or innovators that it is funding. This will help organization to track the processes so that the original thoughts and ideas are realized.

6. **Ensure commitment** – The management must be committed toward adopting and funding fledgling technologies. The involvement of highest decision making authorities in innovation is vital as this paves the way for the organization as a whole to contribute successfully to new ideas and benefit from these.

7. **Promote creativity** – An organization truly embraces innovation only if it promotes creativity and does not pursue conventionally successful thoughts. The organization must nurture ideas that have the potential to make a major breakthrough.

8. **Have the right mix of strategies for technology scouting** – There are various methods to scout for technologies. An organization could hire field scouts or expert services providers such as Aranca.

9. **Set the objective** – The company must clearly define whether adopting external innovations is a strategic or financial move. This is crucial to decide the channel, organizational structure and plan resources.

10. **Hire the right team** – The practice of adopting external innovation requires guidance from experienced individuals. The technical experts handling the exercise should have intrinsic knowledge of the activity to ensure that the right decisions are reached.

11. **Ensure lean, agile and relevant governance** – Constant monitoring of innovation team will not provide the best results. Flexible decision-making is an essential requirement. Key members should be a part of the decision making committee. The unit should also be able to draw from the company's expertise and resources.

12. **Keep financing consistent** – To deliver results, supply of funds to the innovation teams should be constant.

About Aranca

Founded in 2003, Aranca is a global research & advisory services firm working with clients worldwide across financial markets, industry sectors and technology domains. Aranca brings to play the strong combination of best data and best talent to empower decision makers with intelligence and insights, enabling them to reach better business decisions. Our multi-disciplinary expertise is designed to cater to clients of all sizes across a wide spectrum, from Fortune 500 companies and financial institutions to private equity and high potential startups. In the MENA region, Aranca works with some of the top family groups, private equity and investment management firms with strong focus on strategic corporate and financial advisory services.

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