ENTREHUBS

CREATIVE THINKING

Scope

This chapter aims to introduce the context of creative thinking. To achieve this, we explore the creative thinking concept and its relationship with teaching and learning activities. In the next section, we focus on delimiting creative thinking timeline and its usefulness in the education field. We also provide the method and methodology of creative thinking as well as a model of creative thinking and offer several resources to explore the usefulness of the method.

Expected outcomes

- identifying the elements that define creative thinking
- understanding the usefulness of the methodology
- identifying the methods and methodologies used in creative thinking

DID YOU KNOW?

Creative thinking and agile management are connected. Agile methodologies are likely to be implemented when creative thinking is stimulated in an organization.

WHAT IS CREATIVE THINKING?

Creative thinking refers to the ability of individuals to generate, evaluate and improve original and effective ideas, with the help of imagination, for solving different problems.
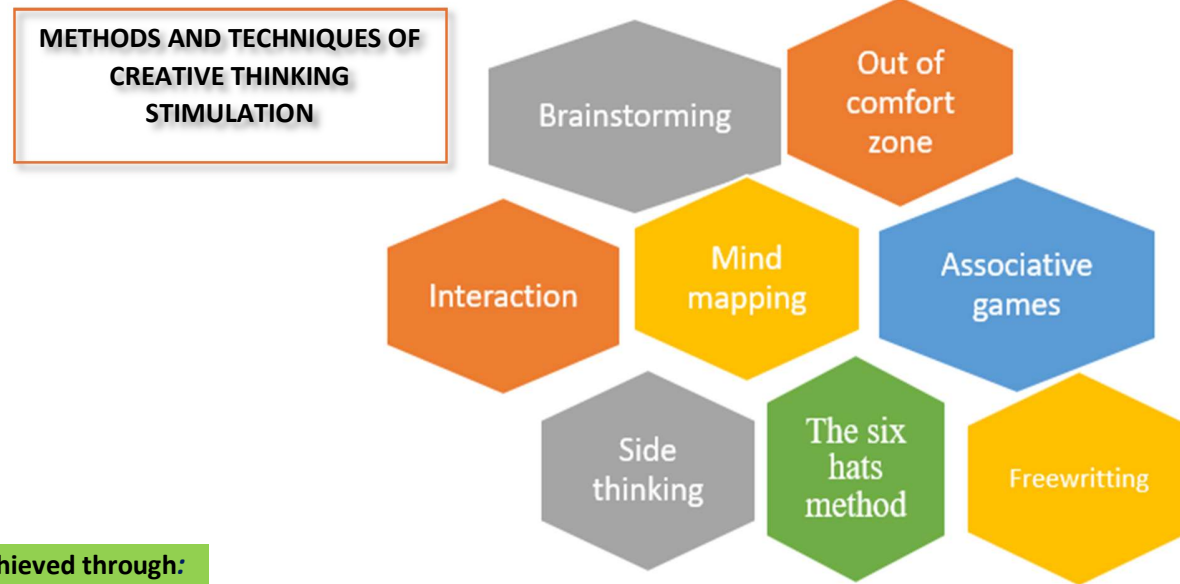
BACKGROUND:

Creative thinking was first mentioned in 1967, when Edward de Bono described it as the ability of a person to find original solutions to complicated problems (Edward de Bono, 2011). Since then, many initiatives by public authorities and international organizations have included creative thinking in their agenda. For example, OECD required that by 2030 educational fields comply and include creative thinking and learning techniques in their curricula, among critical thinking or emotional intelligence.
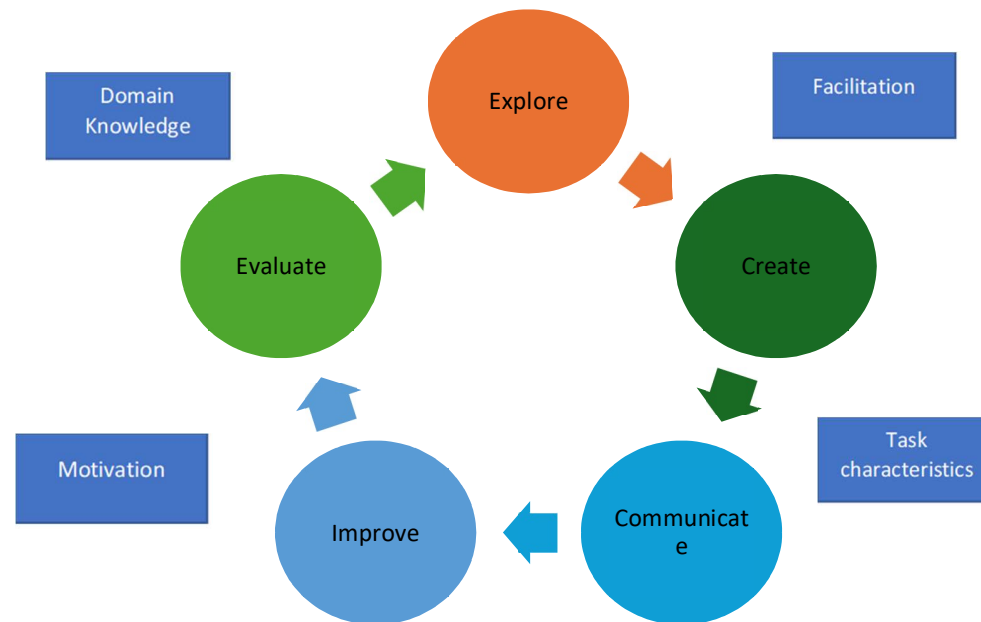
METHODS AND TECHNIQUES OF CREATIVE THINKING STIMULATION

Brainstorming

Out of comfort zone

Interaction

Mind mapping

Associative games

Side thinking

The six hats method

Freewritting

Stimulating creativity can be achieved through:

✔ *Critical thinking*
✔ *Change of perception*
✔ *Innovation embracement*
✔ *Different methods and techniques*

HOW DOES IT WORK?

Over time, many researchers developed different models of stimulating creative thinking, but also creative learning and assessment. For example, Rosen et al. in 2020, defined five keywords that define creative thinking: explore, create, communicate, improve, evaluate and four factors that influence it: knowledge, motivation, facilitation, and task characteristics.

MODEL OF CREATIVE THINKING LEARNING AND ASSESSMENT

Source: Rosen et al., 2020

TIP !

Adapt the method or the technique to each organization for achieving the creative thinking goals.

External links and addition reading:

Education 2030

PISA Creative Thinking Framework

Design for Creative Thinking, Learning and Assessment in Schools

Resources

de Bono, E. (2011). Lateral Thinking, Harper Collins Publisher, ISBN: 0060903252
https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf, p. 5

INNOVATION MINDSET

Scope

The aim of this section is first to explain the process of innovation mindset and discuss its essential elements.

The main purpose is also to show you the steps that you can take to implement an innovation mindset within your business.

Expected outcomes

- To understand what an innovation mindset is.
- To acquire the knowledge on how to implement it in your business.

DEFINITION

The innovation mindset is a certain attitude towards what is going on. This is above all openness and willingness to act. It concentrates on new products, processes, propositions, or business models in order to create added value for customers and employees.

It is a set of attitudes, inclinations, interests, and cultures that acknowledge, prioritize, and understand the role and significance of innovation in a company's growth and development.

QUICK FACTS SECTION

"The drivers of innovation mindset:
Willingness to create
Willingness to make a difference.
Willingness to learn from failures."
by Jorge Vieneke

BACKGROUND/DESCRIPTION:

In recent years, the term "innovation mindset" has gained strength among scholars. It emerges as a semantic symbol of this effort to get organizations moving toward the innumerable possibilities for innovation creation and the nature of individuals actively involved in the process.

Elements of INNOVATION MINDSET

An innovation mindset is about what you believe, how you see things, how you behave and what you do to make change happen. It is comprehensive. Your mindset is an important part of your personality, but it is based on your beliefs. However strong they are, you can change your beliefs. While changing your mindset is neither an easy nor a quick process, the great news is that you've already taken the first step!

1. Belief – What motivated you to start and keep going on the innovation? Why was it important to come up with a solution?

Faith in what is being done is the most important factor. Only when we are sure of ourselves, can we convince customers of a new idea (sometimes it is also necessary to convince decision-makers in the company). The most innovative companies start out not as leaders, but as small, faith-filled companies, while large companies are often over-cautious… or rather, fear personal responsibility for a possible failure of the product.

### 2. Perspectives – what key contributions did you make to the innovation?

One of the most valuable resources of an organization are people. It is people who create and introduce innovations, and their attitude towards innovation is the most important. The leader plays a very important role in shaping innovative attitudes in the company. Leaders should be open to ideas and initiatives of employees, they should support them, not inhibit them. They must also trust their employees by creating the right working atmosphere based on cooperation, loyalty and trust. Employees must, however, be aware of the real impact of innovation processes in the company.

3. Behaviours – how did you help the team succeed?

Innovation behaviour refers to activities that result in generating ideas, new and useful, and then generating their implementation. Therefore, you have to ask yourself: What did others in the team contribute? It can be an open mind, curiosity, imagination, helpfulness, enthusiasm.

4. Take Action.

No behavior will positively impact innovation if you don't take action. Since innovation is about creating something new that is completely uncertain, the only way we can know what to do next is to just start doing something. It seems more difficult than it really is because staying in the information gathering phase is convenient and allows us to feel safe.
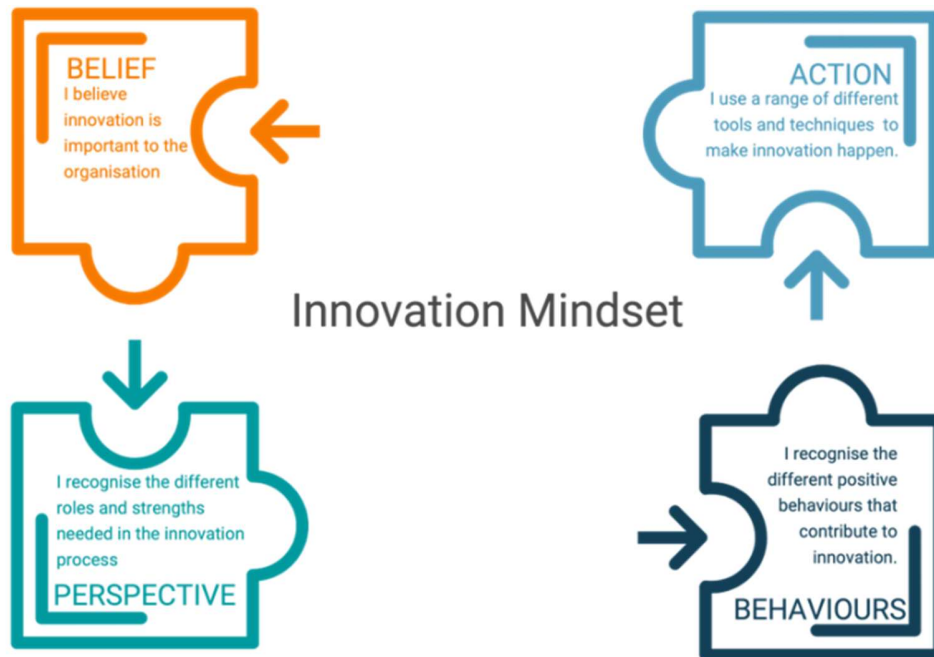
How to implement an innovation mindset in your business?

There are several steps that you can take to implement an innovation mindset in your business:

Step 1: Develop an Innovation Strategy

The innovation strategy is a concept that regulates activities in the area of innovation, separate from the business strategy. The innovation strategy focuses on processes aimed at stimulating innovation in the company and its environment. It allows you to identify changes taking place in the area of innovation, determine their impact on the functioning of the company and plan your own actions to achieve the intended goals.

Therefore, you have to define relevant tools and methods with your designated supervisors and managers, including metrics and performance indicators that would measure efficiency, progress, and success.

Step2: Set up an innovation committee

Bring together a select group of professionals and give them the mission of fostering innovative culture. It has to be a multidisciplinary and multi-hierarchical committee. The people that create the team need to have different skills, experience, roles and positions / responsibilities. Team members who share and support other people's ideas are more helpful and effective than people who just want to keep everything to themselves.

Step 3: Encourage internal and external collaboration

Another crucial point for the implementation of the innovative mentality is collaboration. It is very important to create a climate of mutual help and exchange of ideas. Therefore, you have to encourage collaboration with suppliers, customers, and business partners. These external audiences can help to visualize bottlenecks, modify processes, have disruptive ideas, among other things.

Step 4: Invest in Technology and Qualified Personnel

Investing in technology does not only make your work easier, it also speeds up relevant processes and helps you do everything with convenience.

With good software and IT services, it is possible to better outline the innovation strategy, provide information and toolkits for innovation committee staff, improve communication and collaboration (internal and external), and more.

Likewise, hiring qualified professionals and thinking driven by innovation (or desire to) facilitates the generation of the corporate mindset of innovation. Putting this premise to the HR staff is well indicated.

Step 5: Think outside the box

A true innovator imagines things that don't yet exist, solutions that will change the world for the better. Managers should encourage their employees to anticipate the future, think about future needs, generate ideas. The scheme is created by history, solutions by the present. That's why it's worth looking into the future.

External links:

https://pdf.usaid.gov/pdf_docs/PA00X96H.pdf

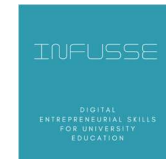*https://hbr.org/video/2192249931001/creating-an-innovation-mindset*

- **! TIP** *Eight Ways to Develop an Innovative Mindset*
- *Curiosity trumps technical expertise.*
- *Be comfortable with the uncomfortable.*
- *Get your hands dirty.*
- *Be a voracious consumer of news and ideas.*
- *Persist.*
- *Embrace failure as part of your journey.*
- *Believe that innovation comes in all shapes and sizes.*

References

https://elearning.mla.com.au/lessons/elements-of-an-innovation-mindset/
https://www.acceptmission.com/blog/innovation-mindset/
https://www.mjvinnovation.com/blog/innovation-mindset-in-your-business/
https://elearning.mla.com.au/lessons/elements-of-an-innovation-mindset/

EXPERIENTAL LEARNING

Scope

This chapter aims to introduce the context of experiental learning

Expected outcomes

- identifying the elements that define an experiental learning
- understanding the usefulness of this method

WHAT IS EXPERIENTAL LEARNING?

Experiential learning (EL) is, quite simply, learning by doing.

We have all learned to walk or talk, not by being shown or told, but by practising and refining our technique. Consequently, trainers and facilitators can implement this method in all sorts of situations with people from all walks of life.

One of the quickest ways to highlight the ways in which experiential learning differs from other methodologies is to take a look at what it is *not*:

EL is not the writing of new information onto the blank slate of your mind.

Nor is it the act of memorising an immutable bank of knowledge.

EL is not a passive process that happens to a learner; rather it is an active process that engages them and invites participation.

BACKGROUND:

Experiential learning is a powerful way to help people identify changes required to their skills, attitudes and behaviours, then implement those changes for better performance.

What are the principles of experiential learning?

Experiential learning stands in contrast to prominent theories of learning which underpin most traditional educational methods, like behaviorism and implicit learning. These theories have their own ideas on the goal of learning, the best way to learn, measures of success, and the nature of what can be learned.

EL brings a different theoretical perspective, as we will see in the following principles.

Focus on the learning *process* rather than on the *outcomes*

Behavioural conceptualisations of learning suggest you can measure effectiveness of learning by the number of facts or habits a person has learned in response to stimulus questions or conditions. These elements of thought – or ideas – are fixed, and the goal is acquiring more of them.

EL suggests that ideas are not fixed; rather, they form and re-form through experience. Experience intervenes and because this is unique each time, so too are the resulting ideas.

In EL, the measure of success therefore moves beyond acquisition of facts, and instead becomes lasting behavioural change, the development of skills and behaviours to respond to different situations, and an ability to apply this knowledge.

The process of learning is grounded in experience

Implementing, testing, evaluating and refining ideas exclusively with reference to familiar experiences does not present an opportunity for learning, because experience must overcome expectation to hold value.

As a result, education involves refining and modifying old ideas as well as implanting new ones, and experience is the vehicle through which this process can take place.

The response to new ideas depends on those currently held, and the responsibility of teachers, instructors, facilitators – whichever word you prefer – is to sculpt the experience and the surrounding discussion in a way that maximises its value.

Learning is a transactional process

The transaction takes place between the environment and the learner.

The resulting experience and knowledge are applicable in wider contexts, due to the fact that the knowledge is the result of testing and refining theories, rather than learning by rote.

Hence in situations with different conditions but where some commonalities exist, current knowledge can contribute to the basis for continued learning.

First let's take a look at the abilities a learner needs to be able to engage with an experiential learning task:

- Concrete experience
- Reflective observation
- Abstract conceptualisation
- Active experimentation

External links:

[What is Experiential Learning?](#)

[(22) (PDF) Experiential Learning Theory (researchgate.net)](#)

Resources

https://www.experientiallearning.org/info/what-is-experiential-learning/

OPEN INNOVATION (OI)

Scope

This section aims at introducing the concept of open innovation, the differences between open and closed innovation, the main business models that allow us to innovate with others as well as the main types of partners to innovate with.

Expected outcomes

- To understand what open innovation is
- To define the processes of open innovation
- To learn about the type of partners that a business can cooperate with

DEFINITION

Open Innovation is a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model".[1]

BACKGROUND:

Recently, growing attention has been devoted to the concept of "Open Innovation", both in academia as well as in practice. Chesbrough, who coined the term "Open Innovation" describes in his book "Open Innovation: The New Imperative for Creating and Profiting from Technology" (2003[2]) how companies have shifted from so-called closed innovation processes towards a more open way of innovating. Open Innovation is the process of growing

QUICK FACTS SECTION

SMEs tend to be more flexible, are more reactive to market changes, have shorter decision-making processes and therefore it's easier for them to exploit OI

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[1] "Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation", Chesbrough and Bogers, 2014

[2] *Open Innovation: The New Imperative for Creating and Profiting from Technology,* 2003

and developing a company or business line by introducing technologies or business models from outside of the company. It is the process of working with outside companies or advisors to introduce technologies and/or expertise into the company's business. A very simple example is where a company is selling goods through well established distribution channels which are changing rapidly. It then works with an outside company skilled in selling goods directly through social media channels.

Traditional "Closed" Innovation VS Open Innovation

Innovation is a tool that businesses utilize to create and use knowledge, create new goods and services, create new business models, and eventually provide financial results. In the past, businesses only innovated using internal resources. The scientific community's non-commercial emphasis and need to safeguard its priceless assets were the key drivers. These businesses gave resources, projects, and investments in innovation a higher priority. As a result, businesses with **closed innovation** models frequently have sizable research departments that provide a wealth of internal knowledge.

Recently, a new invention approach known as "**open innovation**" has evolved. Instead of starting from scratch, it encourages businesses to harness the external knowledge that already exists. Creating connections with other businesses, institutions of higher learning, technology hubs, and other knowledge sources is viewed favorably in this way.

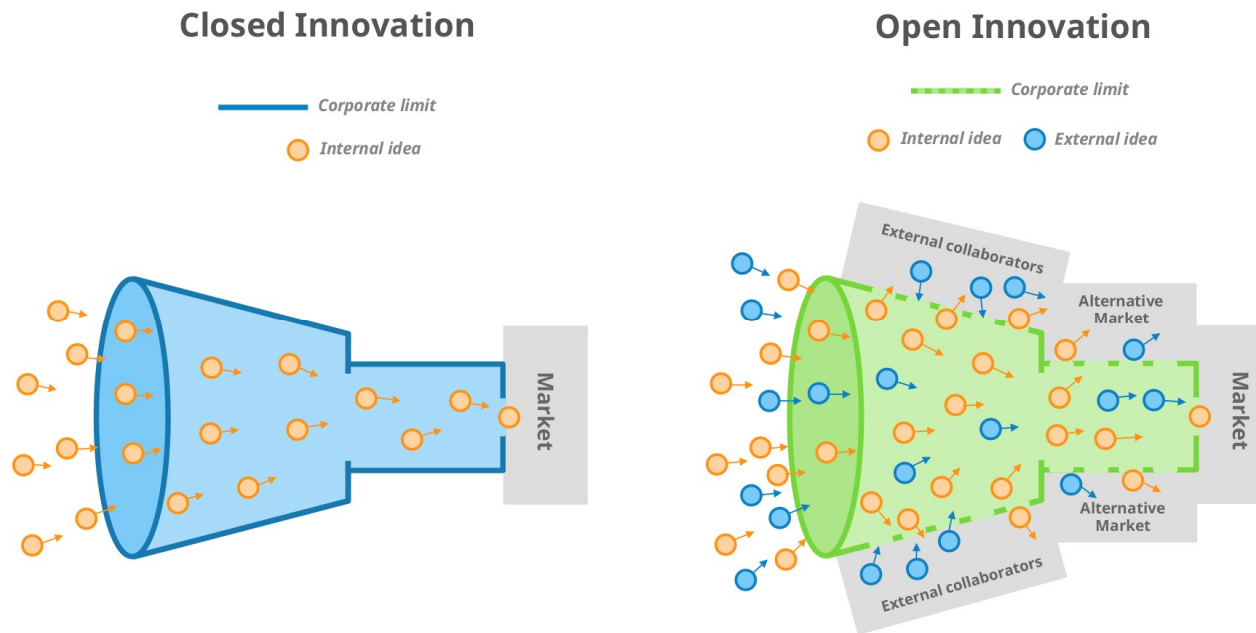| Closed Innovation	Open Innovation
The smart people in our field work for us	Not all the smart people work for us. We need to collaborate with smart people inside & outside our firm
To profit from R&D, we must discover it, develop it and ship it ourselves	External R&D can create significant value; internal R&D needed to claim a portion of the value
If we discover it ourselves we will get it to the market first	We don't have to originate the research to profit from it

The company that gets an innovation to market first will win

Building a better business model is better than getting to the market first

If we create the most and the best ideas in the industry we will win

If we make the best use of internal and external ideas we will win

Chesbrough, H. (2003), "Open Innovation: The New Imperative for Creating and Profiting from Technology", Harvard Business School Press.

CORE OPEN INNOVATION PROCESSES

A business has a number of strategic choices, in its attempt to innovate, regarding A) who develops innovation and B) who exploits the innovation result. This paradigm leads us to three types of open innovation[3]:

- **The outside-in process**: Inbound innovation is about sourcing and acquiring expertise from outside the organisation, and scanning the external environment for new information to identify, select, utilize and internalize ideas. (Example: buying a patent from another company)
- **The inside-out process**: Outbound innovation is the purposive commercialization and capture of internally developed ideas in the organisation's external environment. This might be done through selective revealing of a product to journalists and reviewers or selectively selling the technology or service to customers with a view to getting feedback. (Example: licensing a patent to another company)
- **The coupled process:** The third process concerns alliances with complementarities, in which there is a simultaneous flow of knowledge from inside to outside and from outside in. The combinatorial process is about co-creation products through strategic alliances, joint ventures and others collaborative methods.

Open Innovation Business Model

Every business which wants to innovate has to select the right business model. The business model of a company defines the core value proposition of the resources for targeted market, the way that the value chain is formed and the relationships within the company's internal and external ecosystem to enable production of these valuable resources, what the revenue mechanism, which will allow the capture of the value created, are and, ultimately, the competitive strategy that allows maintaining the value of the resources over time. Following the traditional concept of a closed business model, companies try to develop their resources internally and to exploit them within the limits of their own company. This approach has begun to highlight its limits, resulting in businesses realizing that they don't have to develop

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internally all the resources required for business success in increasingly complex production environments. This leads the businesses to adopt open innovation models.

6 categories intersecting the choices between closed or open business model and the possible combinations of "open innovation' have been formed:

1. **Closed innovation model**: the firm chooses to develop and to exploit a new activity with the resources and knowledge that it has at its disposal.
2. **Unexploited knowledge that is exploited by third parties**: the business transfers knowledge that is not going to use for the development of a new product/service or process.
3. **Utilization of third party knowledge for new product development**: company gains access to available knowledge it has produced within the boundaries of another organization/business and utilizes it as a component or as a core for a new product.
4. **Search for third-party resources to develop a new business model**: the company develops a new business approach in collaboration with another organization, with the greater part of the technological value arising, however, from a third party.
5. **Internal knowledge accessible to third parties for the development of a new business model**: the business externalizes knowledge that has been produced internally to power a new standard from which it can derive direct or indirect benefits.
6. **Utilization of third-party knowledge to develop a new business model**: the company procures knowledge from external environments and other business in order to develop a new business model.

Type of partners to innovate with

For the development and exploitation of innovation, there is a variety of type of partners that a business can innovate with.

- R&D service providers
- Complementary partners
- Customers
- Users

- Suppliers
- Competitors
- Communities
- Crowd

TIPS for SMEs

- *More than OI managerial skills are required: an open social attitude*
- *An OI project is not an isolated or fragmented event; it is a journey (and in fact a learning-based one).*
- *Starting from 'solving a problem' and in turn 'finding a problem' (worth solving) is a recipe for success*

Difficulties in OI for businesses !

- *partnerships with large players may be hard to manage*
- *retaining control over knowledge and technologies is not always possible*
- *they have fewer resources and all decisions are centralized, often creating a bottleneck*

Benefits for businesses

- *Lowering innovation costs*
- *Going to market faster*
- *Boosting product visibility*
- *Attracting potential investors*
- *Increasing the access to skilled persons and infrastructures*

External links:

INSPIRE Open Innovation toolbox

Open Innovation cases

The Open Innovation Model

References

Henry Chesbrough, Wim Vanhaverbeke, and Joel West, eds. (2014). "Explicating open innovation: Clarifying an emerging paradigm for understanding innovation", New Frontiers in Open Innovation. Oxford: Oxford University Press, Forthcoming (pp. 3-28)

Chesbrough, H. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press.