innovativedutch

serious games for serious professionals

# Instruction Guide

## Innovation Management Game

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## INTRODUCTION

Innovation and entrepreneurship are not just skills. They are a strategy. They define who you are. Experience for real how it feels to be an innovative and entrepreneurial leader with the strategy simulation games of Innovative Dutch. Peer over the shoulders of colleagues and teams, follow the progress of your company and competitors online and see how an excellent innovation strategy can make a huge difference. Immerse yourself in strategic decision-making and see how your company gets rewarded with profits or has to deal with losses.

Be inspired to become better every round. Collaborate with your team mates and receive personalized feedback. You will learn to analyse every detail of your strategy on a virtual platform and the impact of successful innovation will be visible right away. Follow the rankings of your company and see how your decisions have had an influence on your company's performance. There is a taste for everyone, from undergraduate students to experienced policy-makers.

So, why did we start Innovative Dutch? We are living in an experience economy. Innovation should be experienced. It should be seen, it should be heard, it should be smelled, it should be felt and it should be tasted. And yet, we only lecture on innovation theory. That's wrong: innovation should be learned in all senses. Of course, innovation theory is important: it should be heard. But practitioners should be able to see it working in real life, to experience it. They should know how it tastes like to create a new product and launch it into the market, they should smell the pain that is involved in failure, but also how it feels like to get better afterwards. Innovation is using all your senses. And that's when we came up with the idea of the simulations game on the topic of innovation.

It started in late 2011, when we first came up with the idea. In early 2012, the team of enthusiasts had grown and the first beta-version of the game was released. It was tested among a wide range of study programs, some large corporations and SMEs. Feedback was very positive and they decided to move it forward and develop the game into the business strategy game that it now is.

We really hope that the players of this game look backwards in the end and say that they are better innovation professionals. That they have learned the fundamentals of innovation, that they have learned how it works in reality, that they have learned that failure brings a company forward and that they know how to use their senses to work with innovation. We hope they see innovation opportunities, they listen to – the sometimes very weak, but so important – signals from consumers and partners, they feel the excitement of creating new products and services, they are able of tasting the many different flavours that are involved in innovation processes and they smell the aromas of becoming the number one in the field.

With kind regards,

Innovative Dutch: serious games for serious professionals.

# 1. GAME DESIGN

In this chapter the functional principles of the game – the learning objectives(s) and the learning environment will be introduced.

## 1.1 PRIMARY LEARNING OBJECTIVES

The learning objectives follow four main learning effects of serious games in teaching innovation sciences as proposed by Bogers & Sproedt (2012) in their article "Playful Collaboration (or Not): Using a Game to Grasp the Social Dynamics of Open Innovation in Innovation and Business Education":

1. **Enable critical reflection on social dynamics and experience-based learning** – applying the learning of reflections and experience through iteration. Teams have to show their ability on this aspect by a continuous approach on playing the game and a growing amount of awareness of the gameplay and progress based on results and reflections.
2. **The game enables to students to create a more holistic understanding of complex social dynamics when dealing with novelty.** Teams have to show their ability on this aspect by preferring a long-term oriented focus and a strategic perspective on running an innovative organization over a short-term oriented focus with a focus on operational results.
3. **A deeper understanding of innovation sciences.** Teams have to show their ability on this aspect by taking "wise" decisions in the game. Wise decisions match criteria such as: effectiveness within the changing context of the simulation, efficiency based on the return on investment (in time, quality and money), coherency between different decisions taken and coherence over the years.
4. **Creating a shared experience of social dynamics and the paradox of co-opetition for the students.** Teams have to show their ability on this aspect by an indication of strategic focus over the years and a certain amount of logic correlation between the decisions taken in different years. Effective teams collaborate in order to take well-thought decisions. Less effective teams often don't talk about long-term strategies and don't support each other on taking smart decisions. This will be reflected by a lack of strategic focus in the game.

For the game we translated this into 5 game objectives. Upon succesfull completion of the game, (future) leaders:

1. are able to manage the paradox of both unleashing and harnessing the creativity and entrepreneurial thinking in organizations;
2. are able to understand the mechanisms, systems and processes behind commercializing new and innovative solutions;
3. are able to make balanced decisions regarding prioritization in the innovation process;
4. are able to realize the importance of a culture of experimentation and open collaboration;
5. are able to learn quickly, both from team members, customers and themselves;

6. are able to deal with ambiguity in the innovation process, removing roadblocks, examining risks and using both analysis and instinct.

## 1.2 SCENARIO

The game always takes place in a business-to-consumer high-tech sector such like the Robotics sector. In the game, you'll start as an employee of a Medium-Sized Enterprise with around €7.5 million annual sales. You get the responsibility over a small team and you'll get a budget with which you could increase (or decrease) the annual innovation spendings of your department.

During the game, you will get new functions in your company, with increased privileges to take decisions.

## 1.3 THEORY

Why does innovation matter: Societal changes and technological (r)evolution result in uncertain and unpredictable market circumstances, which require organizations to stay ahead of competition by focusing on continuous organizational growth and progress, which in turn requires innovation.

The theoretical dilemma's that form the basic elements of this game are:

- Strategic Dilemmas: what strategy will you follow?
- Eight Types of Innovation: what types are you focusing on and why?
- Innovation Funnel: the dilemma of the fact that innovation decision makers have to deal with both the short term (operations) to stay alive in a highly competitive market and the long term (strategy) to create value in the future is the basic concept of this game. It sounds easy, but with limited means it is very hard to make the right choices.

## 1.4 STRATEGIC DILEMMAS

In this game 6 different innovation strategies can be chosen:

- Radical vs. Incremental
- Product leadership vs. Customer Intimacy
- Exploration vs. Exploitation
- Open vs. Closed
- Local vs. Global
- In-house van Outsourcing

## 1.5 EIGHT TYPES OF INNOVATION PROCESSES

The Eight Types of Innovation are based on Keeley's (2013) model of the Ten Types of Innovation. We distinguish 8 types of innovation:

- Innovation of the Customer Experience
    - Type 1: Marketing & Branding
- Innovation of the Product (System)
    - Type 2: Ideation
    - Type 3: Technology
    - Type 4: Co-Creation
- Innovation of the Configuration
    - Type 5: Social Innovation
    - Type 6: Entrepreneurship
    - Type 7: Open Innovation
    - Type 8: Business Model Innovation

**Type 1: Marketing & Branding**

This type could be explicited in 4 different categories that are usually part of a strong marketing strategy: customer engagement, branding, service and distribution.

Customer engagement is about creating an excellent experience for your customers. Simply said: marketing and communication. In 1999, Joseph Pine and James Gilmore first introduced the concept of an Experience Economy. The concept is that goods and services are no longer enough for consumers – that businesses must create memorable events and experiences that capture their audience and create experiences that transforms their brand's value proposition (Forbes, 2014). Total experience marketing is a 360-degree platform. Marketing is everywhere. It's digital, mobile, experiential, social and word of mouth. A brand conversation that begins on a TV campaign must continue digitally. It should become a two-way conversation and ultimately a customer springboard that the brand is curating and amplifying on social platforms. (Forbes, 2014)

Branding is about the representation of your offerings and business. A strong brand creates extra value for your product or service. An example of that would be Virgin. There are many aspects that make Virgin a great brand, but the personalization of the

brand in the form of Richard Branson is probably the best one. Richard Branson is well known for using social media and blogging. He's synonymous with Virgin brands to the extent that the first link on the Virgin.com menu is simply 'Richard'. And of course we all know who Richard is. He's the biggest Virgin advocate and ambassador and that's a great lesson for any business leader. His persona is very public and allows him to tell stories in many media. The Virgin website itself has a timeline, telling the story of Richard's business interests that quickly become the sprawling Virgin brand. This timeline is beautifully illustrated and replete with nostalgia. (eConsultancy.com)

Service is about supporting and amplifying the value of offerings. Examples include guarantee, lease, loans, loyalty programs, the opportunity for self-service and try before you buy.

Some companies focus only on creating add value through services for other companies. One of them is the Dutch-based company BrandLoyalty which helps other companies creating loyalty campaigns as a service for the most important customers. They say:

> *BrandLoyalty's unique value lies in our 'full service' approach. We take away all the potential worries and complexities of executing a programme that a retailer could face. These include:*
> - *Providing initial strategic advice*
> - *Developing a tailor-made programme*
> - *Implementing the programme, or series of programmes*
> - *Managing and then evaluating each programme*
> - *Logistics*
> - *Analysis*

Distribution has always been one of the most expensive elements of the production process. And because of that companies are always looking for more efficient ways to bring products or services to the customers. The internet has changed distribution channels radically, but also physical distribution channels take new forms every year. One popular example of a new channel is a so-called pop-up store. These pop-up stores, especially combined with 'go direct', means that producers can skip several players in the chain of production and create temporary stores within larger stores to sell their products and create brand value. This form of channel innovation is recently adopted by many department stores.

**Type 2: Ideation**

Ideation is the creative process of generating, developing, and communicating new ideas, where an idea is understood as a basic element of thought that can be either visual, concrete, or abstract. Ideation comprises all stages of a thought cycle, from innovation, to development, to actualization. As such, it is an essential part of the design process, both in education and practice.

The front-end marketing phases have been very well researched, with valuable models proposed. Peter Koen et al. provides a five-step front-end activity called front-end

innovation: opportunity identification, opportunity analysis, idea genesis, idea selection, and idea and technology development. He also includes an engine in the middle of the five front-end stages and the possible outside barriers that can influence the process outcome. The engine represents the management driving the activities described. The front end of the innovation is the greatest area of weakness in the NPD process. This is mainly because the FFE is often chaotic, unpredictable and unstructured. Engineering design is the process whereby a technical solution is developed iteratively to solve a given problem. The design stage is very important because at this stage most of the product life cycle costs are engaged. Previous research shows that 70% - 80% of the final product quality and 70% of the product entire life-cycle cost are determined in the product design phase, therefore the design-manufacturing interface represent the greatest opportunity for cost reduction. Design projects last from a few weeks to three years with an average of one year. Design and Commercialization phases usually start a very early collaboration. When the concept design is finished it will be sent to manufacturing plant for prototyping, developing a Concurrent Engineering approach by implementing practices such as QFD, DFM/DFA and more. The output of the design (engineering) is a set of product and process specifications – mostly in the form of drawings, and the output of manufacturing is the product ready for sale. Basically, the design team will develop drawings with technical specifications representing the future product, and will send it to the manufacturing plant to be executed. Solving product/process fit problems is of high priority in information communication design because 90% of the development effort must be scrapped if any changes are made after the release to manufacturing.

**Type 3: Technology**

This type is about developing distinguishing features for your product or service. This is the most 'well-known' form of innovation because it includes styling, exceptional quality, new technology and safety aspects of the product or service. In the example we'll see a product that is superior in technology and design from Dyson. Another form of product performance is customization. A classic example of customization would be Mars with its M&M's that are fully customizable with personal logos and messages. Another example would be Nike, which gives users the opportunity to design its own shoes. An example of a technology with a radically improved quality is Corning Gorilla Glass, a very thin scratch-resistant glass especially developed for smartphones. It is currently used in over a billion devices worldwide for over 33 brands.

A combination of new products could lead to a product system. This is about creating value from complementary products and services. For instance, complements, extensions, plug-ins and modular services. IKEA, while also accelerating in process innovation, also reinvented the world of complements (or bundled products) by letting users select certain bundles of products and adding extensions, colors and other materials individually. It was a radically different view in the furniture industry.

Technology is also about creating superior methods to do your work (more effectively and more efficiently). Examples of process innovation are 'lean production' and 'on-demand production'. In the example depicted we are seeing the case of Uber versus

the traditional taxi industry. Uber basically reinvented the process of getting a cab. It is very lean and very automated and therefore highly effective. The need for clarity around problem solving, collaboration, and communication leads to formal operational processes which can reduce ambiguity and create more predictable results. Operational processes that are too formal, however, can erect barriers to creativity, create bureaucracy, and lead to less coordination across the organization (Roca, 2013).

**Type 4: Co-Creation**

Co-creation is a management initiative, or form of economic strategy, that brings different parties together (for instance, a company and a group of customers), in order to jointly produce a mutually valued outcome. Co-created value arises in the form of personalized, unique experiences for the customer (value-in-use) and ongoing revenue, learning and enhanced market performance drivers for the firm (loyalty, relationships, customer word of mouth). Value is co-created with customers if and when a customer is able to personalize his or her experience using a firm's product-service proposition – in the lifetime of its use – to a level that is best suited to get his or her job(s) or tasks done and which allows the firm to derive greater value from its product-service investment in the form of new knowledge, higher revenues/profitability and/or superior brand value/loyalty.

Scholars C. K. Prahalad and Venkat Ramaswamy popularized the concept in their 2000 Harvard Business Review article, "Co-Opting Customer Competence". They developed their arguments further in their book, published by the Harvard Business School Press, The Future of Competition, where they offered examples including Napster and Netflix showing that customers would no longer be satisfied with making yes or no decisions on what a company offers.

**Type 5: Social Innovation**

This type is about innovating the structure of your organization. In the broadest definition. It is about building an organization that is scalable and flexible – think about the Rockefeller Habits – and bout aligning talents and assets within that structure. Quite often it comes down to a 'culture of innovation'. Examples are: a competency center, a corporate university, talent development programs and knowledge management. Thinking about physical structure, it could mean decentralizing your management, rethinking your incentive structure and redesigning organizational processes or even outsourcing.

A specific article that we would often like to refer to, is that of Quinn & Cameron about organizational cultures. It splits organizations in 4 different cultural types:

- Adhocracy cultures
- Clan cultures
- Hierarchy cultures
- Market cultures

**Type 6: Entrepreneurship**

Intrapreneurship is the act of behaving like an entrepreneur while working within a large organization. Intrapreneurship is known as the practice of a corporate management style that integrates risk-taking and innovation approaches, as well as the reward and motivational techniques, that are more traditionally thought of as being the province of entrepreneurship.

Pinchot (1984) defined intrapreneurs as "dreamers who do. Those who take hands-on responsibility for creating innovation of any kind, within a business". In 1992, The American Heritage Dictionary acknowledged the popular use of a new word, intrapreneur, to mean "A person within a large corporation who takes direct responsibility for turning an idea into a profitable finished product through assertive risk-taking and innovation". Koch (2014) goes further, claiming that intrapreneurs are the "secret weapon" of the business world. Based on these definitions, being an intrapreneur is considered to be beneficial for both intrapreneurs and large organisations. Companies support intrapreneurs with finance and access to corporate resources, while intrapreneurs create innovation for companies.

**Type 7: Open Innovation**

This type of innovation is about having connections with others to create value for your organization. For instance, building strategic alliances or collaborating with other companies. Another example would be Open Innovation: "Combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies." (Chesbrough, 2006).

The example shown above is about GSK (GlaxoSmithKline) who started an Open Innovation platform where both researchers, scientists, medical professionals and users started to co-think about new solutions. There are many more examples, such as Samsung with its Samsung Accelerator, Samsung's Open Innovation Center and Samsung Semiconductor Open Innovation Page. Other examples include Wayra by Telefonica, Entrepreneurs in Residence Program, Shell's GameChanger program and Google's Startup program.

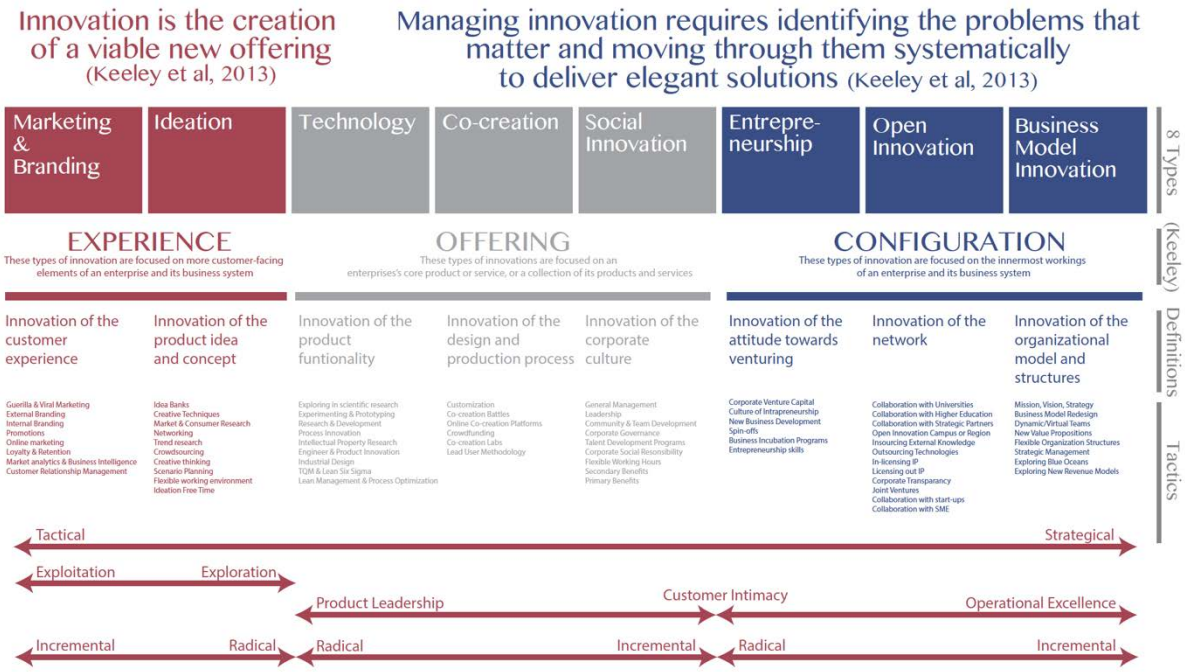
**Type 8: Business Model Innovation**

This type is about the way in which your company is making money. For instance through a bundled pricing system, a cost-leadership strategy focusing on mass production and reducing prices or a freemium model that lets users use your product for free until a certain limit.

Gilette makes an interesting example, as it flipped its business model when it was still a young company. In the beginning it sold its razor for a high prices and its blades for a low price. At time, where many men sharpened their blades themselves, this used to be the normal business model. However, Gillette introduced the "razor and blades business model", where the razors were sold at a very cheap price and the

complementary products (the blades) sold at a premium price. We still find this business model everywhere around us, for instance in the printer industry (where inkjets are sold at a premium price) or the games industry.

This is an overview of all 8 types of innovation processes:




## 1.6 INNOVATION FUNNEL

Many scholars have tried to identify phases or stages of innovation processes, resulting in the following stages of innovation: market research, idea generation, conceptual and technological development and commercialization (Gopalakrishnan & Damanpour, 1997; Ortigueira, 2008; Verhaeghe & Kfir, 2002). For this game, we make use of the innovation funnel to clarify this process.

***The following text is an abstract from an article published by Gerry Katz in Applied Marketing Science, 2011. The article however, is not publicly available anymore.***

As originally envisioned, the product development funnel implied that a well-defined product development process exists. However, the original funnel, and others that have followed, are increasingly seen as lacking. This article proposes a new funnel that addresses these missing elements.

The icon of a funnel has been in use for several decades now as a visual depiction of the new product development (NPD) process. It works well because it implies that product development is, in fact, a refinement process that takes us from the earliest stages of a project – with a lot of fuzzy ideas and fuzzy thinking – to the final stage of new product launch. However, in reviewing the many funnels that have been proposed and used over the years, there is a growing realization that most are lacking in a few important ways. In this article, we will review some of these funnels, discuss their strengths and weaknesses, and ultimately propose a new one that addresses these weaknesses.


*Evolution of the Product Development Process:*

One of the earliest attempts to create a "flowchart" diagram of the product development process appeared in Urban and Hauser's 1980 textbook, Design and Marketing of New Products.

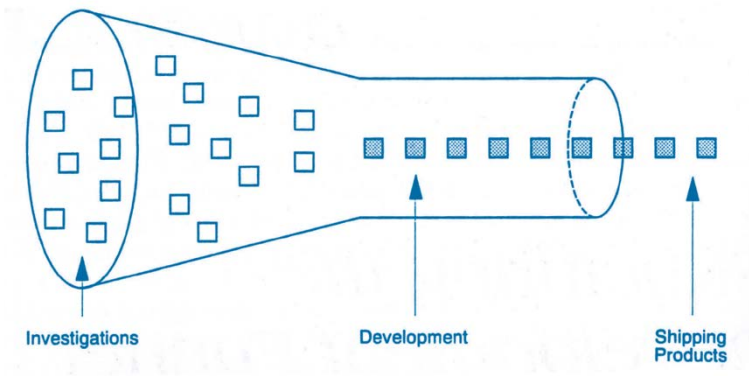
Having been close to these authors at the time of their writing, it is evident that most of the real-world examples that led to this flowchart came from the world of consumer packaged goods (CPG), a realm in which ideas were plentiful and most did not require any particular technical expertise to imagine – e.g. a new flavour of soup, a new brand of toothpaste, or a new dishwashing liquid. In this world, most of the action deals with marketing issues such as the screening of ideas, product positioning, advertising and messaging, and sales forecasting. The creation of prototypes to test was usually neither prohibitively expensive nor technically daunting, and so the process almost always included real world "test marketing", i.e. launching the product in a small geographic area in order to test its viability before the major investment of a national or international launch. In this world, little attention was paid to the idea generation process.

Next, in 1986, Robert Cooper published the first edition of his popular book, Winning at New Products. In it, he presents a diagram of the product development process that breaks it into five stages preceded by a process he calls "discovery," a process that includes idea screening. Only two years later did he give this process a name: Stage

Gates®, a name that he actually trademarked and is now in use at companies worldwide.

Cooper's "client" for this process diagram was usually either the research and development (R&D) director or a high-level NPD manager who needed to deal with a portfolio of products, all at different stages of development. What he advocated was a formal management review process in which product development teams were required to come before this high-level management committee to present their project so that management could make an informed decision, using consistent criteria, as to whether to promote a project onto the next stage of development or to kill it.

Notice, however, that Cooper's discovery process – which includes idea generation and screening – precedes the main Stage Gate process. At this earliest stage of new product development, little budget is required, and in many cases, no team has even been assigned to work on the project.



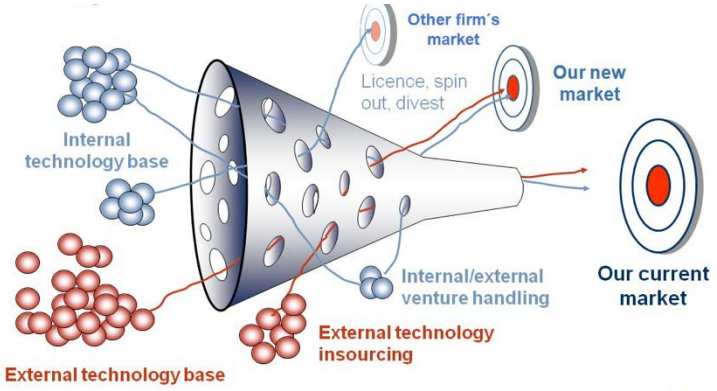

The earliest use of a literal "funnel" that I was able to find appeared in Wheelwright and Clark's 1992 textbook, Revolutionizing Product Development.

Their diagram consists of three major stages, which they label Investigations, Development, and Shipping of Products. As with the previous two, the emphasis at the start is on screening of ideas. Little is said as to where the ideas come from or how they are generated.

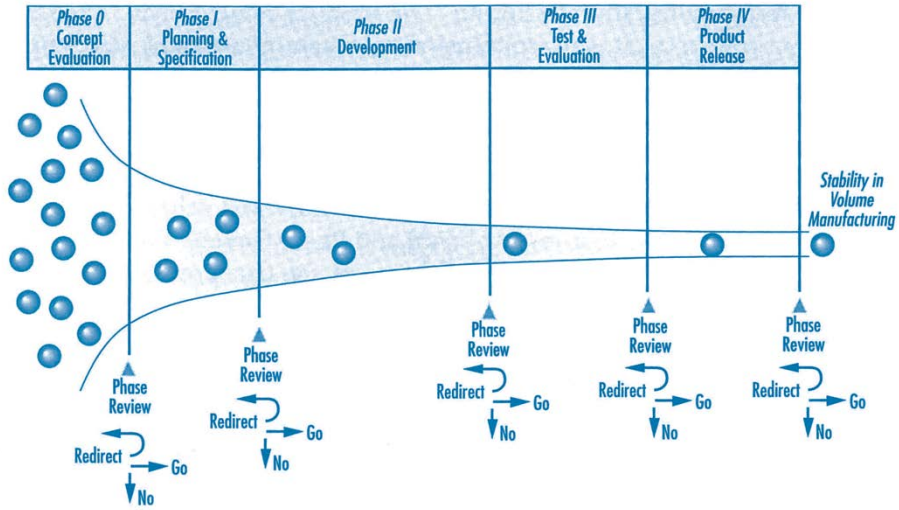
At approximately the same time, Michael McGrath, one of the founders of the consulting firm PRTM, published his book, Setting the PACE in Product Development6. McGrath's first stage deals with Concept Development, usually a piecing together of ideas into a full product description. Similar to Cooper, McGrath advocates a periodic management review process that he calls Phase Reviews. But in almost every other way, they are the equivalent of Stage Gates.

One other noteworthy thing about McGrath's process is that he includes the development of a formal "business case" as a major phase before the project moves onto formal development. As with Cooper, his focus is with a portfolio of projects which need to be weeded through periodically. And again, little is said about where the ideas come from. They clearly precede the entrance to his funnel.

A similar diagram was put forth in 2005 by MIT's Center for Innovation in Product Development (CIPD). It has some of the characteristics of all of the preceding diagrams – a literal funnel, with multiple projects proceeding in parallel. But once again, the "discovery" process falls outside the funnel in a stage called "Opportunity Identification and Idea Generation" with little advice about how to go about it.




In 2006 Chesbrough published his famous book on Open Innovation, with an 'open funnel' included:



## 1.7 GAME MODEL

The previous paragraph leads to a model that forms the basis for the game. It integrates the strategic option, the eight types of innovation and the funnel.


## 1.8 SCOPE OF THE GAME

Products are sold at an average price of €100-€500 and companies are already up and running with an annual turnover of around €5 million. It is a closed market: no companies are leaving (unless they go bankrupt) and no companies are entering during the game. The industry does not interact with other industries.

## 1.9 LEVEL OF ABSTRACTION

This game is about innovation management and not about innovation. This means that all decisions are about managing innovation and not creating a specific innovation. As an 'innovation manager' you will only see the number of projects and some other variables, but you won't see the actual names and technologies. This means this game has a higher form of abstraction than some other games.

## 1.10 FORMAT

The game is played over several rounds that are similar to each other. Each round spans one year in the game. Because this is a strategy game, and it usually takes 3-5 years to implement a strategy, we suggest everybody to play around 6 rounds.

## 1.10 RULES

There are just one simple rule:

- Deliver your results before the deadline. Results delivered after the deadline will not be taken into account.

## 1.11 POLICY

If you don't follow the rules, you will get an in-game fine. If you don't obey the rules for the second time you will get bankrupt and won't be able to continue playing. You'll have to talk to your company spokesperson or university teacher in order to get that fixed.

## 1.12 EVENTS AND BONUSES

The game includes 'special events': things that can suddenly happen and couldn't be foreseen beforehand. This increases the gameplay. The events are always related to the topic of the game. The game also includes bonuses: a special award for achieving a certain target, which can be found in the assignment.

## 1.13 TEAMS AND ROLES

There is an option to use different team roles in the game.

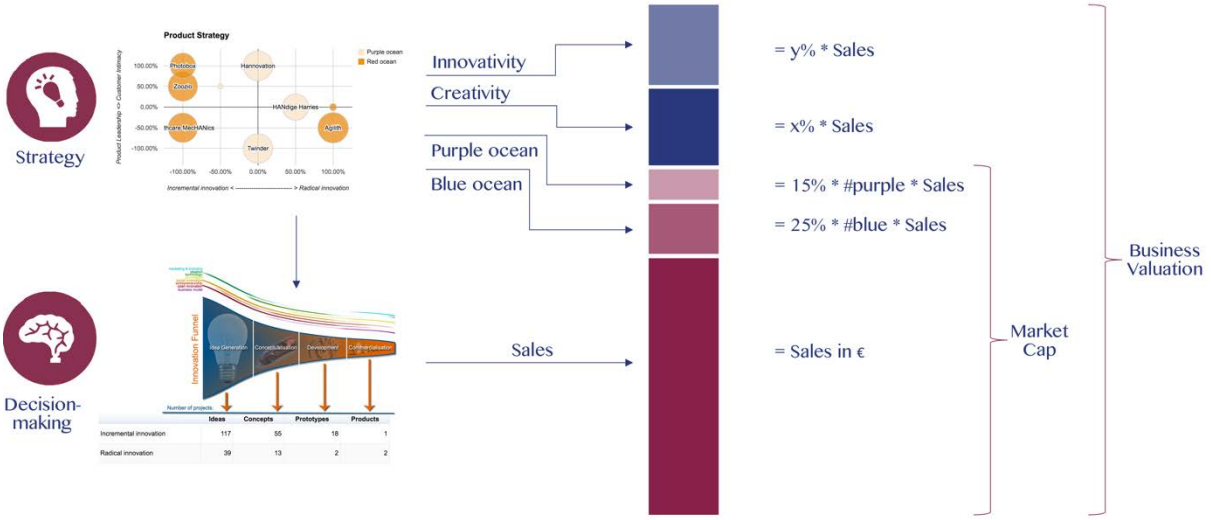
## 1.14 INDICATORS

There are many different indicators in the game, but the three most important are:

- Sales: the total amount of sales you got over the last year. This indicator is directly related to market share.
- Innovation score: this score is indicating your company's ability to create radically new technologies and bring them to market.
- Creativity score: this score is indicating your company's ability to create new products in the funnel.

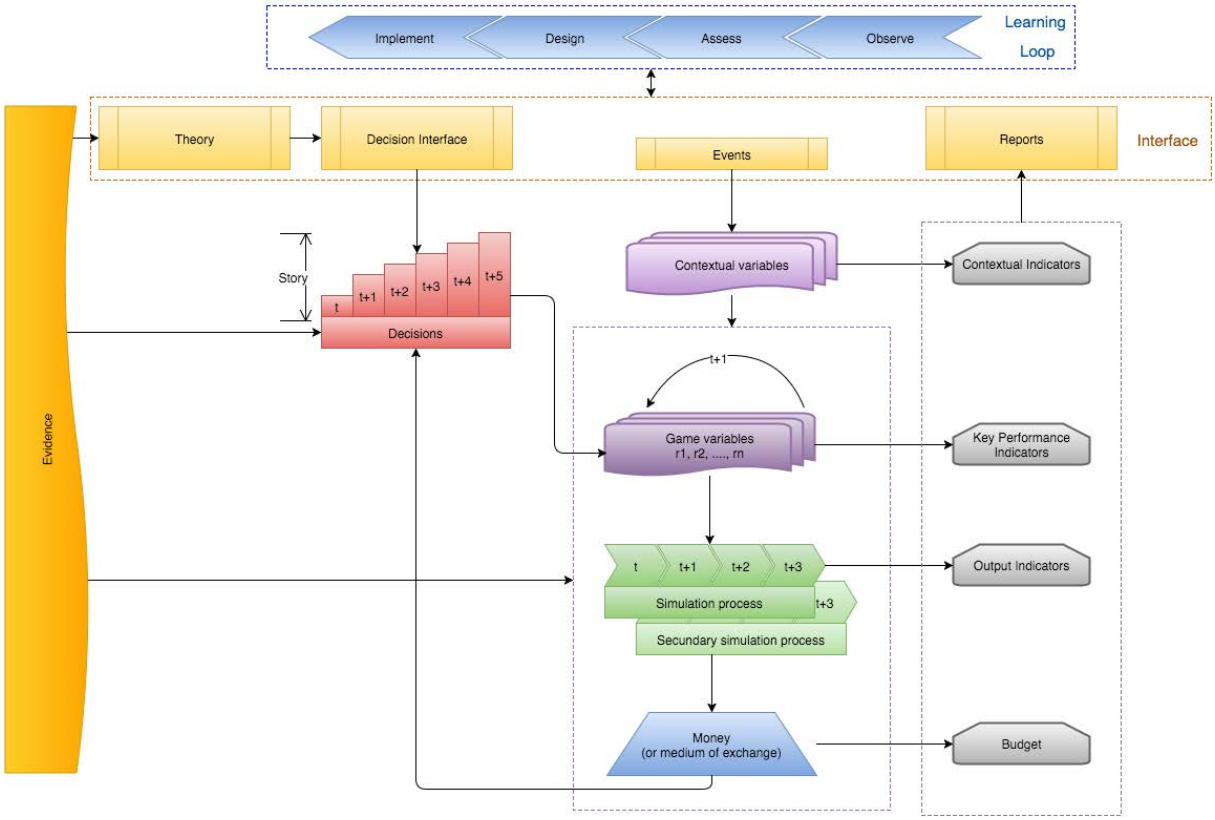
## 1.15 WINNING THE GAME

The former three variables can be combined to create a 'business valuation'. At the end of the game, all companies get an exit to be publically traded. The company with the highest business valuation will win the game. The business valuation is only visible for your own team during the game.




## 1.16 GAME DYNAMICS

All our games follow the following game dynamics:



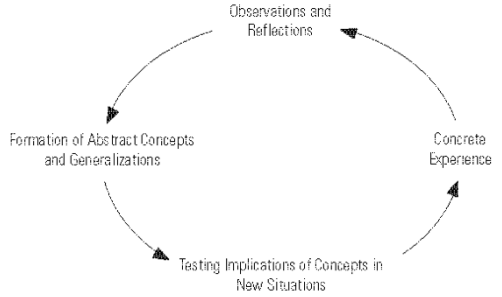
## 2. GAMEPLAY

This game follows a learning loop.

- Assess (results of your team's strategy in the report)
- Design (a new strategy)
- Implement (take decisions)
- Observe (the new annual report)

This repeats itself for a number of rounds. Because of the learning loop, this game is specifically oriented for higher education and very well received in master programs and business trainings.

**Figure 1 The Lewinian Experiential Learning Model**

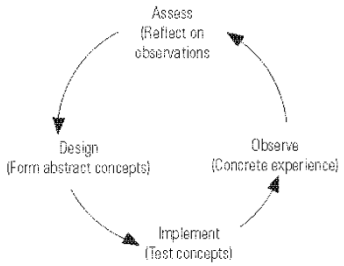



Source: D.A. Kolb, *Experiential Learning: Experience as the Source of Learning and Development* (Englewood Cliffs, New Jersey: Prentice-Hall, 1984), p. 21.

Experiential learning theory is the school of thought that best accommodates these two aspects of learning. One of the theorists associated with this school is Lewin, whose learning cycle is represented in the figure to the right.

As Lewin describes it, a person continually cycles through a process of having a concrete experience, making observations and reflections on that experience, forming abstract concepts and generalizations based on those reflections, and testing those ideas in a new situation, which leads to another concrete experience. This basic cycle has appeared in a variety of settings. In the total quality management (TQM) literature, it shows up as the Deming cycle of plan-do-check-act. Deming himself refers to it as the Shewhart cycle of plan-do-study-act. In organizational development, Schein calls his version the observation-emotional reaction-judgment-intervention cycle. Argyris and Schon refer to a discovery-invention-production-generalization cycle of learning.

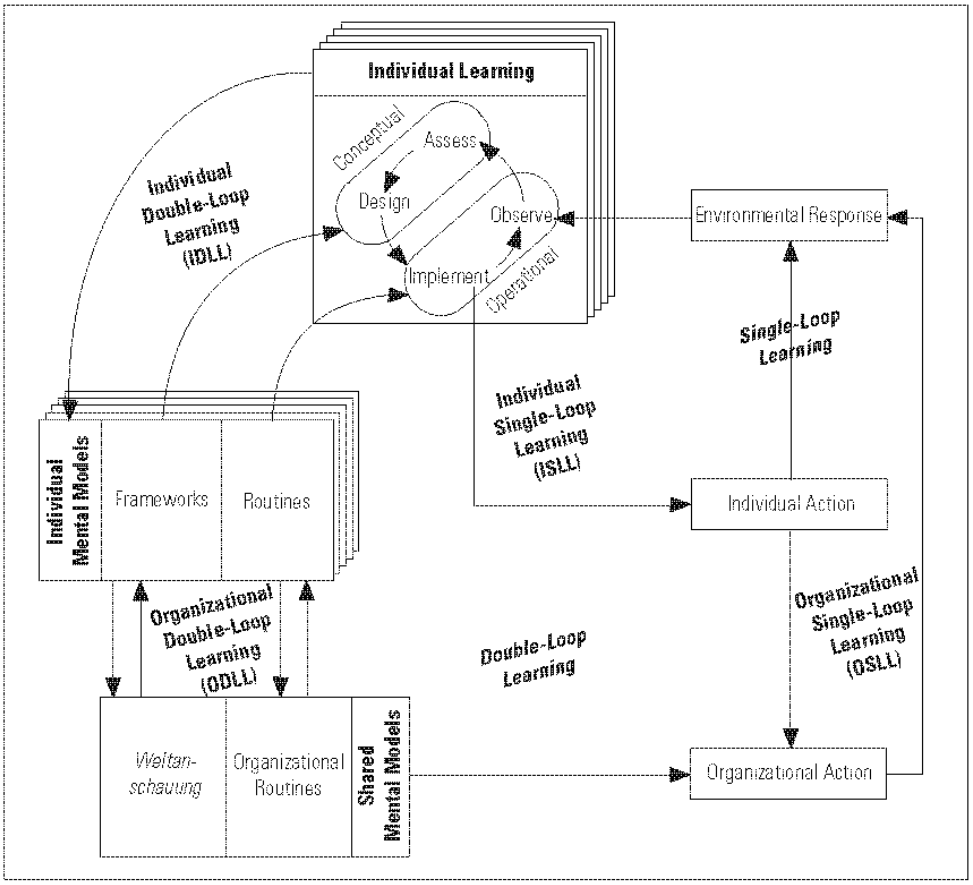
**Figure 2 The Observe-Assess-Design-Implement (OADI) Cycle of Individual Learning**




Source: Adapted from F. Kofman, lecture slides (Cambridge, Massachusetts: MIT Sloan School of Management, 1992).

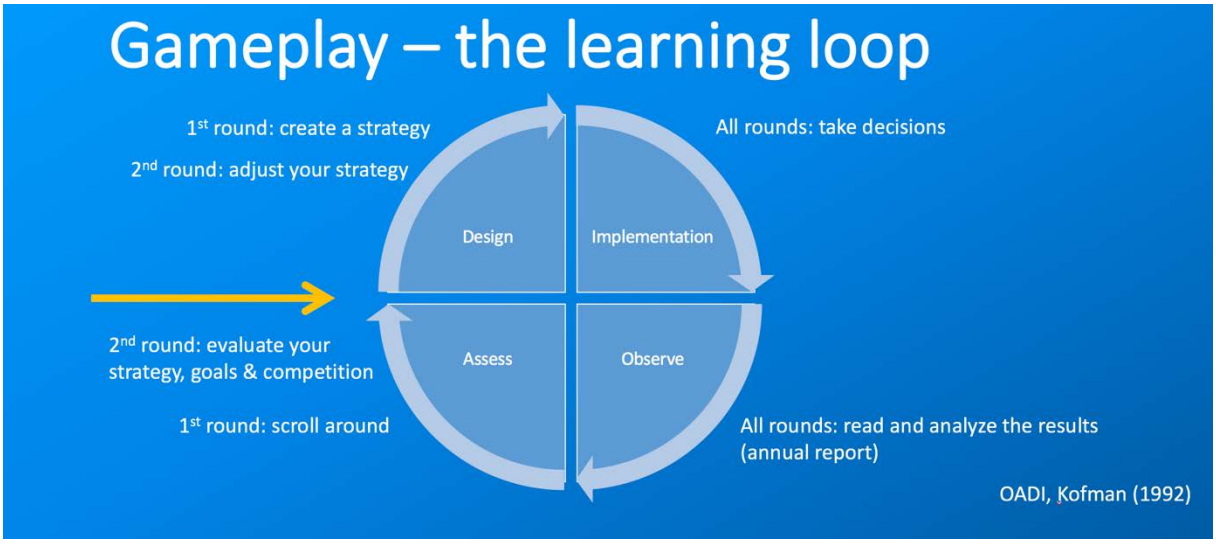
At the risk of added confusion, I have based my model of individual learning on Kofman's version of the learning cycle, as shown in the figure to the right. The observe-assess-design-implement (OADI) cycle preserves the salient features of the versions mentioned above, but the terms have clearer connections to activities conducted in an organizational context. In the OADI cycle, people experience concrete events and actively observe what is happening. They assess (consciously or subconsciously) their experience by reflecting on their observations and then design or construct an abstract concept that seems to be an appropriate response to the assessment. They test the design by implementing it in the concrete world, which leads to a new concrete experience, commencing another cycle.

**Figure 7 An Integrated Model of Organizational Learning: OADI-Shared Mental Models (SMM) Cycle**




In an article on MIT Sloan, Daniel H. Kim describes the way that OADI could be used to increase the effectiveness of organizations. In this game, we therefore use OADI, not only to increase individual learning, but also to increase the learning process of the team and the simulated organization that the teams are trying to run.

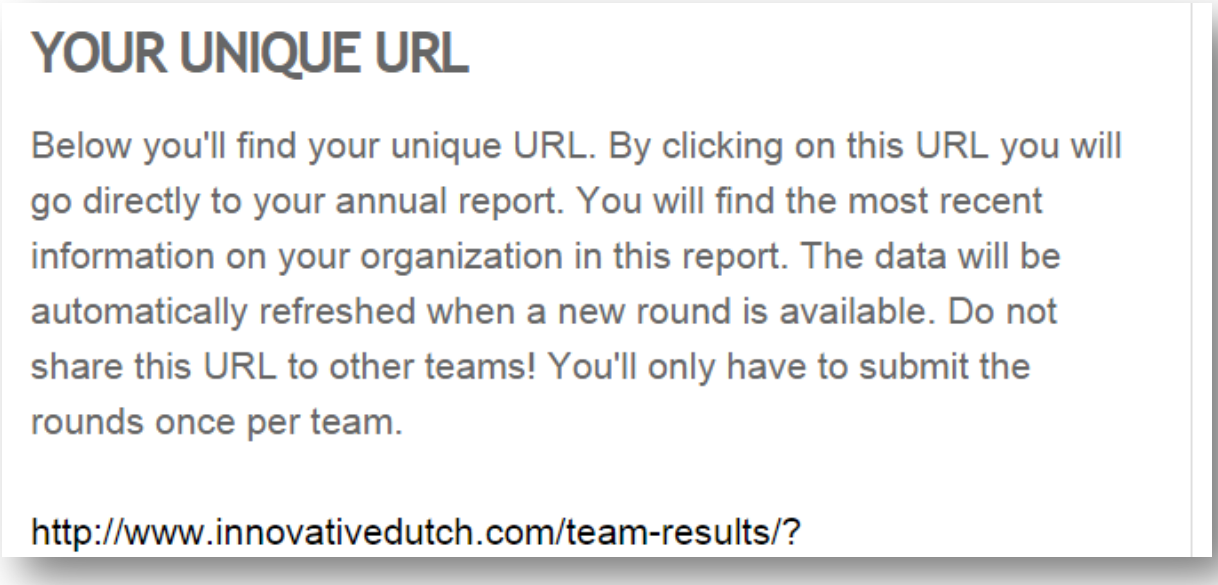
In our games, this looks as followed:



## 2.1 OPEN EMAIL


## 2.2 CLICK URL

Open the e-mail, read the comments and scroll down to your team's **Dashboard url**. Do not share your url with another team!




## 2.3 DASHBOARD

You'll now arrive on your company page:


## 2.4 STUDY THE THEORY

The theory is implemented in the 'take decisions'. When you hang over a certain decision you will find detailed information about the decision.

- Information: it will give you a general explanation of the topic.
- Star rating for each stage of the funnel: this indicates how much effect this decision has on the amount of new projects in that stage of the innovation funnel (with a maximum of 5 stars).
- Investment costs: the costs of this decision.

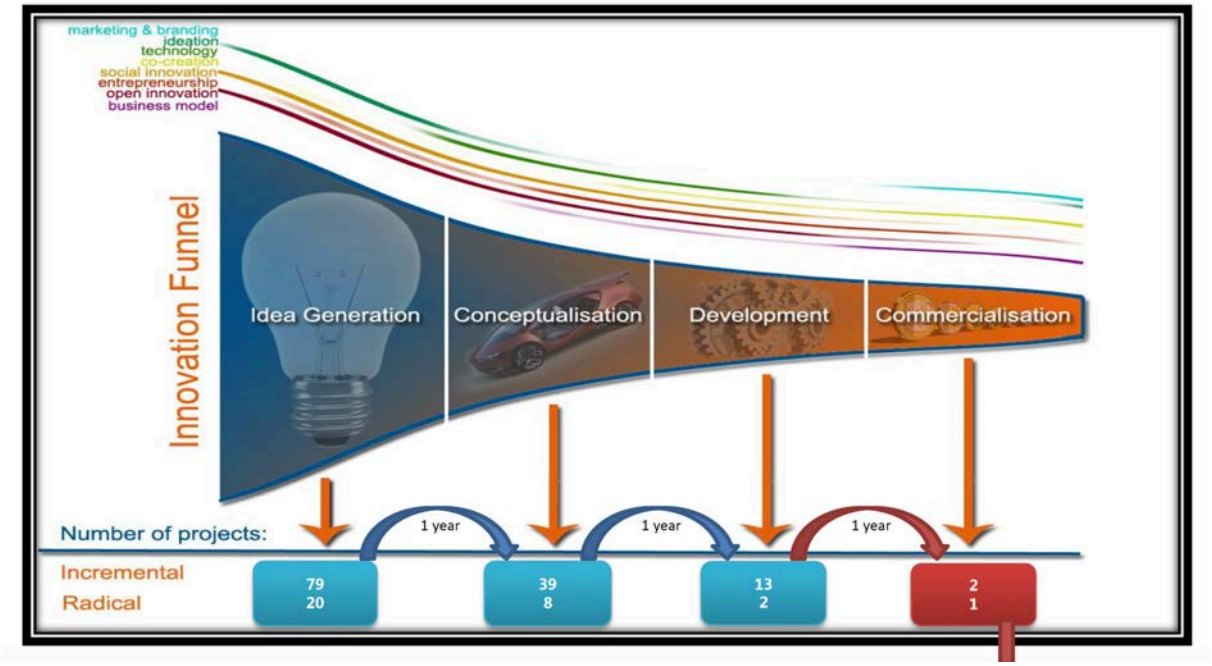
## 2.5 BONUS

Unexpected events are integral part of this game and make the game more fun. They are written in order to be fair, for instance by giving extra results in case of special combinations of decisions. In this game you can achieve bonuses and they're part of the assignment.

## 2.6 ANNUAL REPORT

It's time to open the annual report of your company. We'll walk you through it.

## 2.7 INNOVATION FUNNEL



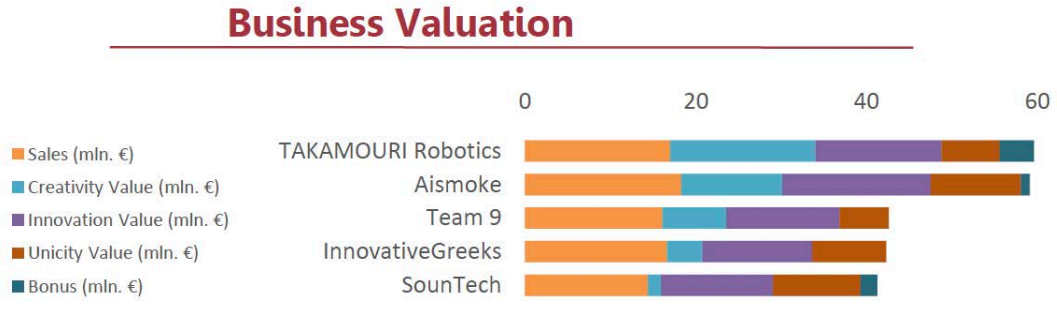

This is probably the most important aspect of the report: your innovation performance.

At the bottom, you will see all your current projects. The blue boxes indicate that the projects are costing money, the red box shows the projects that have been introduced to the market and are generating sales. It takes approximately 1 year to bring one single project to the next phase. The more you invest in that stage, the higher the chance that you'll bring a project into the next stage. You will also see the number of radical and incremental projects: an indicator of your technological performance.

Above the figure you will also find information about the innovation types and at what stages they have the most influence at. For instance: investing a lot in marketing & branding will most likely increase the chance that products that were in the 'development' stage are brought to market. In other words: investing in marketing & branding will help increase your sales. However, at the same time that strategy will decrease the number of new projects, resulting in the fact that in 3 years from now, there will be less products to bring to the market. So you'll also have to think about investing in, for instance, ideation.

## 2.8 BUSINESS VALUATION

Ranked by annual sales/market share:



## 2.9 MARKET PERFORMANCE INDICATORS

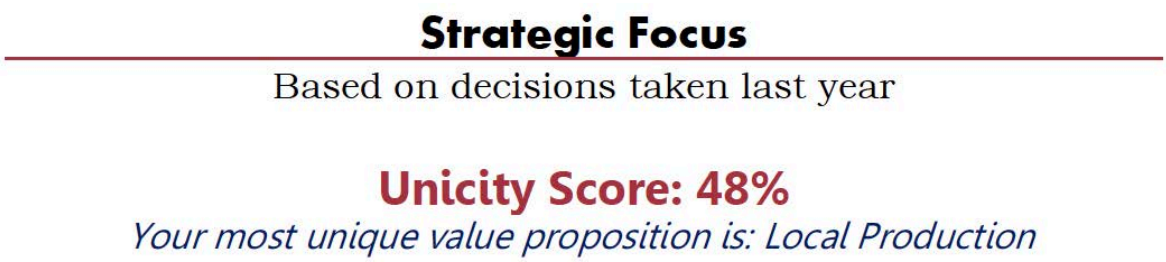
Market Share: The market share pie gives an overview of the share your company has in the total market, which consists of you and your competitors. The share is based on the total sales of each company. The higher the market share, the better.


Sales: The total sales of your company is a reflection of the number of products, both radical and incremental innovations, that you have sold last year and the price that consumers are willing to pay for your products. The number also include products that have been developed during earlier rounds and are still sold. The total sales are important because it gives you an overview of your performance compared to other companies in your market sector.

Product sales: The total sales of your company is a reflection of the number of products, both radical and incremental innovations, that you have sold last year and the price that consumers are willing to pay for your products. The number also include products that have been developed during earlier rounds and are still sold. The total sales are important because it gives you an overview of your performance compared to other companies in your market sector.

## 2.10 UNICITY

Unicity: This score indicate how you position yourself against other teams. In the table you can find how each decision contributes to the different strategies. You can achieve a red, purple or blue ocean.




Tactical agenda: The Tactical Agenda table reflects the agenda of your company. The 'long-term agenda' is a reflection of your organization's relative* investments on the different innovation types over the last 5 rounds. The 'short-term agenda' is a reflection of your organization's relative investments on the different innovation types over the last round only. The score is always between 100% and 0% and the percentages in between indicate how the different types are comparing against each other in your strategy. This graph is important not only because you can use it in your analysis (does it actually reflect your strategy as you intended it to be? Is your tactical agenda in balance with the innovation funnel?) but also as a means to know how and where to invest in to change your strategy.

*Relative: because we compare the investments you did with the investments of other teams.


Innovation & Creativity Scores: These scores reflect the effectiveness of your current strategy in terms of technological excellence (innovation score) and the fuzzy front end (creativity score). The creativity score is the average of your scores on "exploration" and " open". The innovation score is the average of your scores on "radical", "product leadership" and "global". Both are important KPI's as they reflect respectively the robustness of your market-introduction strategy and your long-term strategy. Together

with the total sales they are the most important factor for investors to determine your business valuation.

| Creativity | Innovation Excellence |
|---|---|
| 1. Eldhealth Avatar (100%) | 1. Medbee (100%) |
| 2. MyBot (91%) | 2. GenomZ (88%) |
| 3. GenomZ (53%) | 3. Eye Robot (80%) |
| 4. Medbee (33%) | 4. Group 3 (72%) |
| 5. Group 3 (31%) | 5. MyBot (71%) |
| 6. Eye Robot (18%) | 6. Eldhealth Avatar (71%) |
| 7. Picasso - the new artist in medicine (13%) | 7. Picasso - the new artist in medicine (58%) |

Competitors: The competitive analysis reflects a benchmark study of your strategy and tactics with the strategy and tactics of other teams. A 100% score means that the other team not only has the same order of innovation types on the strategic or tactical agenda, but they also have made the same investments. The lower the score, the more the difference. The benchmark is important because the success of your new innovations in the market is not only based on the quality and marketing of your products, but also on the uniqueness of your strategy compared with your competitors. A unique strategy will help you stand out. Moreover, it is important because it can help you in creating good collaborations.

**Strategy**

Based on decisions over the last 5 years.

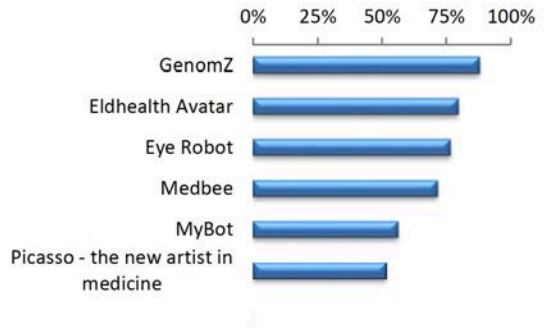
**Strategic Agenda**

The higher the position of the topic on the Strategic Agenda, the more important the topic is for your strategy.

1. 100% - Technology
2. 68% - Entrepreneurship
3. 27% - Ideation
4. 19% - Social Innovation
5. 9% - Open Innovation
6. 6% - Marketing & Branding
7. 4% - Co-creation
8. 0% - Business Model Innovation

**Competitors**

The percentage shows the "Strategic Fit": the extent to which a competitors strategy matches with your strategy.

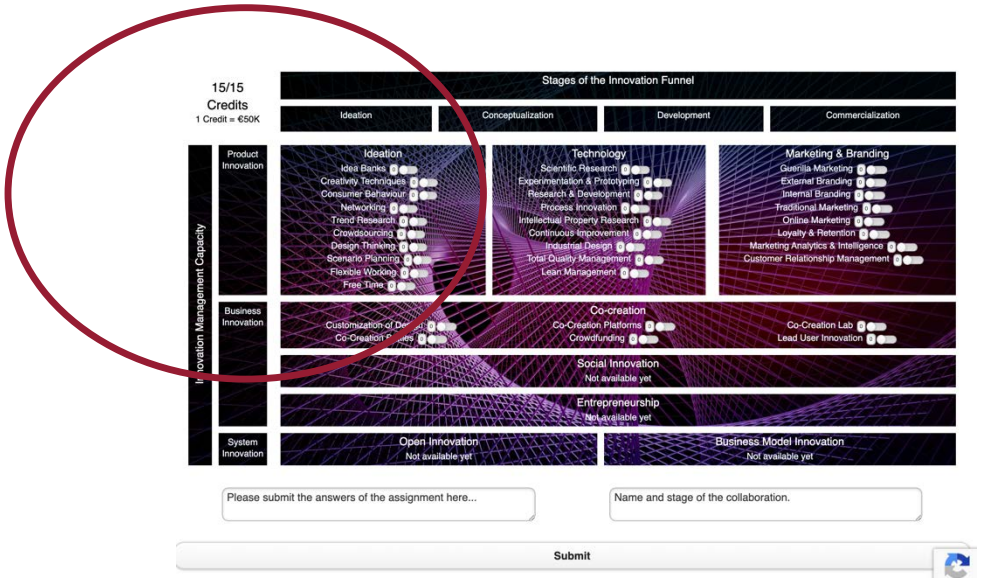



## 2.11 INNOVATION PROCESS

We already saw the funnel, but there is more information about your innovation performance. You can for instance calculate the ratios of how many products you transform from one stage into another.

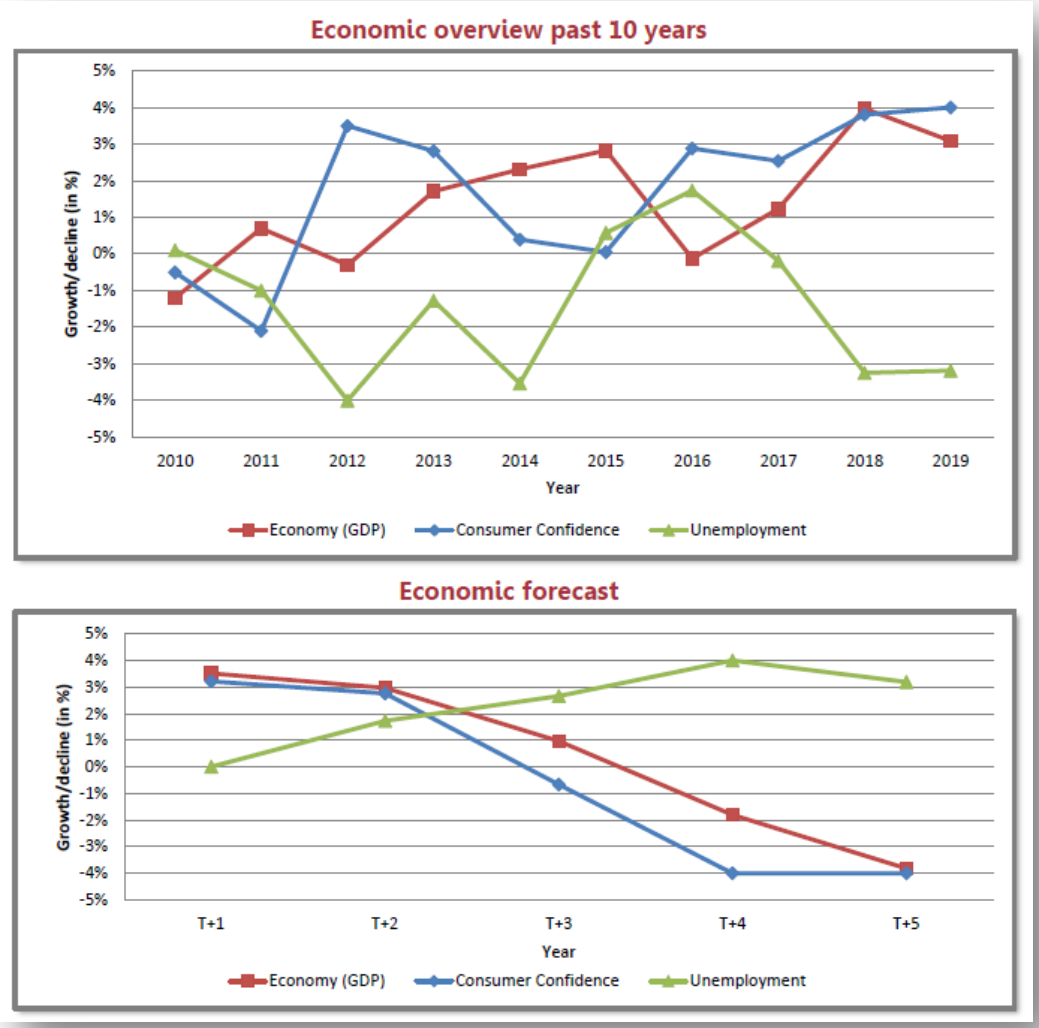
## 2.12 INNOVATION BUDGET

Write down this number: you'll need it when taking decisions. You are allowed to take decisions up to this amount.




## 2.13 ECONOMIC OVERVIEW

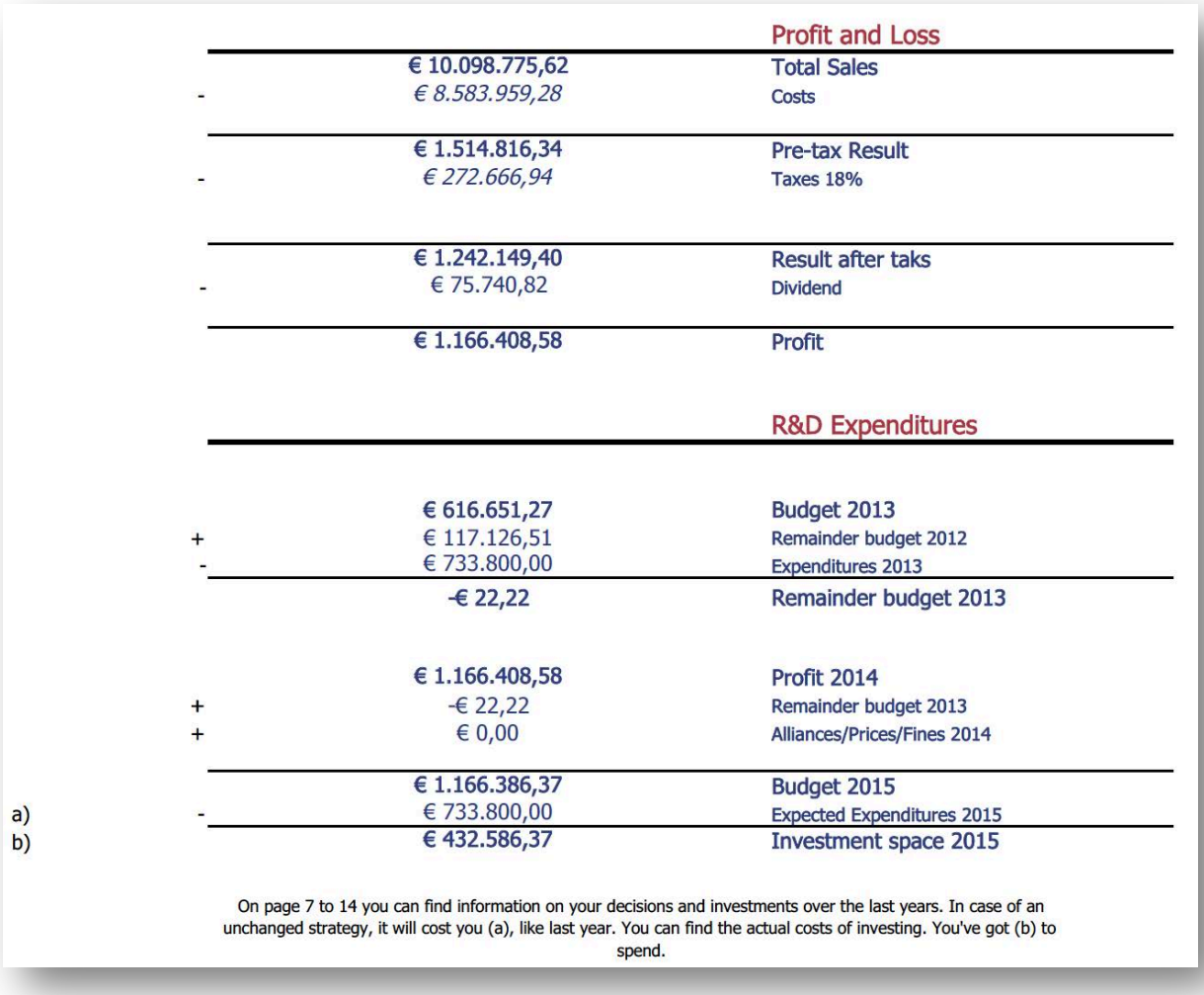
For advanced users, there is also information about the economy. This will influence the likelihood of success of market introductions and could therefore have an impact on your strategy.




## 2.14 FINANCIAL OVERVIEW

In the first appendix, you'll find a detailed overview of your company's financial statement and how the innovation budget is created.

Note: this is deprecated as of 2020. The financial statement can be acquired through your game facilitator only.



| | | Profit and Loss |
|---|---|---|
| | € 10.098.775,62 | Total Sales |
| - | *€ 8.583.959,28* | Costs |
| | € 1.514.816,34 | Pre-tax Result |
| - | *€ 272.666,94* | Taxes 18% |
| | € 1.242.149,40 | Result after taks |
| - | € 75.740,82 | Dividend |
| | € 1.166.408,58 | Profit |
| | | R&D Expenditures |
| | € 616.651,27 | Budget 2013 |
| + | € 117.126,51 | Remainder budget 2012 |
| - | € 733.800,00 | Expenditures 2013 |
| | -€ 22,22 | Remainder budget 2013 |
| | € 1.166.408,58 | Profit 2014 |
| + | -€ 22,22 | Remainder budget 2013 |
| + | € 0,00 | Alliances/Prices/Fines 2014 |
| | € 1.166.386,37 | Budget 2015 |
| a) - | € 733.800,00 | Expected Expenditures 2015 |
| b) | € 432.586,37 | Investment space 2015 |

On page 7 to 14 you can find information on your decisions and investments over the last years. In case of an unchanged strategy, it will cost you (a), like last year. You can find the actual costs of investing. You've got (b) to spend.

## 2.15 PREVIOUS DECISIONS

Make sure to make print screens to be able to see what decisions you have taken in earlier rounds.

## 2.16 ANALYZE YOUR STRATEGY

Compare the results with your (desired) strategy. Build a reflection report:

- First round: in the first round, the teams have to put down a vision for (let's say) five years. This vision then leads to a strategy. In the formulation of the strategy the teams can use, for example, a BCG matrix. The teams should then appoint at least three SMART-formulated objectives for the first round. Use these to form operational decisions (in the game); explain why these decisions are taken. Do this for each topic or specialization.
- Next rounds: the teams should view and analyze the results of the previous round. What goals have are met and which are not? Then decide whether you want to adjust the strategy and if so, set new goals and take according decisions.

You'll find more information on reflection reports and extra assignments in the next chapter.

## 2.17 RECHECK YOUR BUDGET

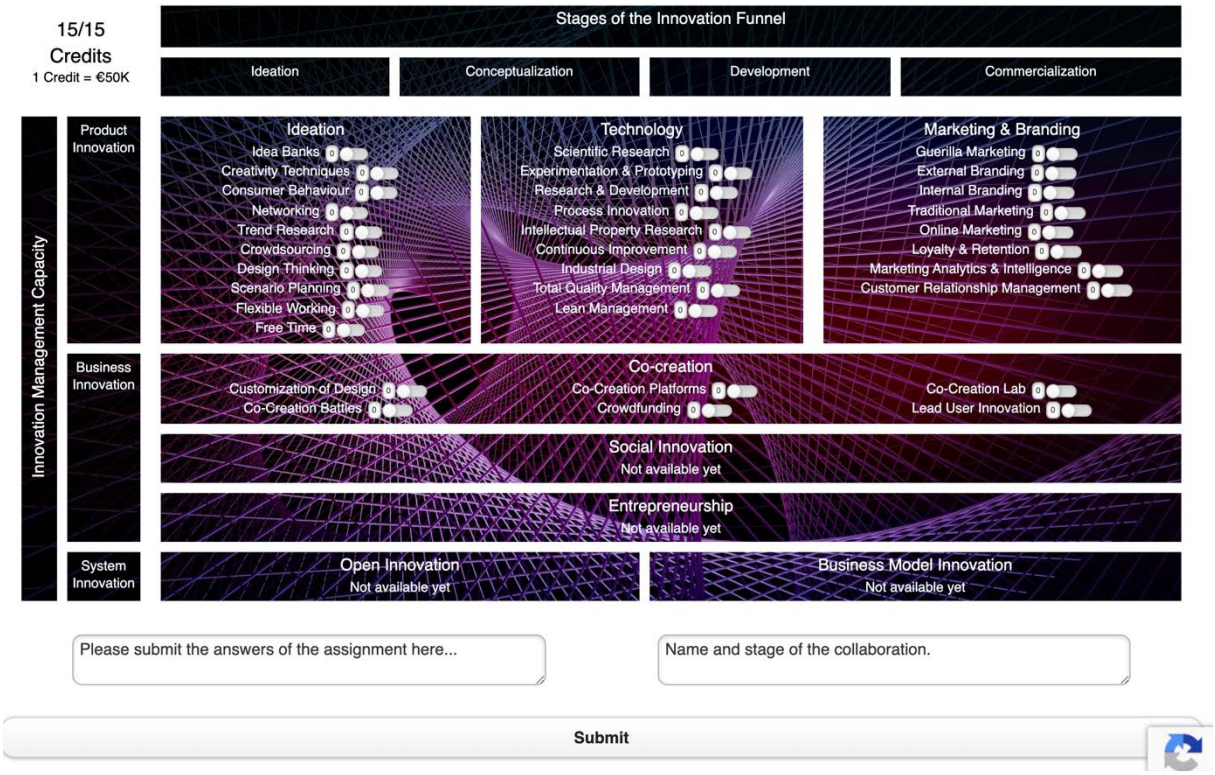
Important: your budget is not the same as your sales; it the difference in total innovation investment of the previous year and the maximum you may spend this year. It is therefore common that the budget decreases, while the sales are growing. A decreased budget is not a sign of poor performance. Decreased sales are.

## 2.18 (RE)DESIGN A COMPETITIVE STRATEGY

Discuss your strategic choices within your team. What do you want to achieve? What goals do you want to aim at?

## 2.19 TAKE DECISIONS

The number of decisions expand every year, meaning that you'll have to spread your budget across more decisions. Don't take just any decision, but align them with your strategy and with each other (some are counterproductive to each other).

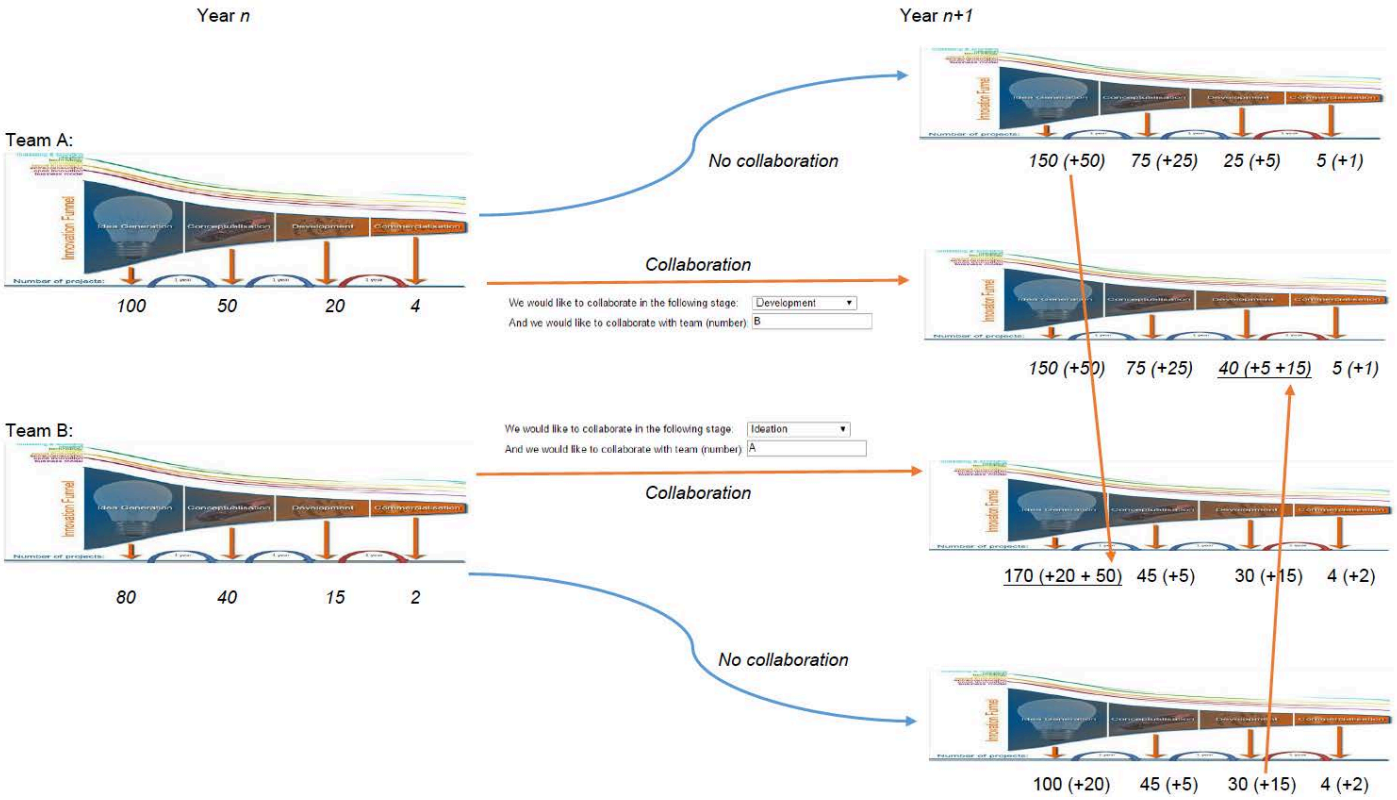



## 2.20 COLLABORATE

In this game, it's possible to collaborate with other teams. A collaboration will help you 'insource' innovation projects in a stage of the innovation that you're not focusing on yourself. By saying you collaborate with another team the number of new projects in that particular stage of the other team will also be

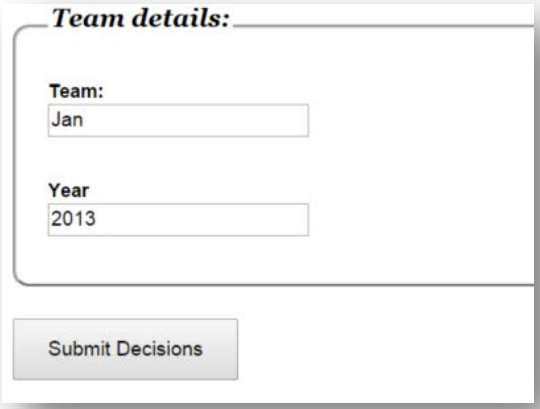
added to your innovation funnel (meaning you don't have to invest in that part this round). You can start an alliance with another team in one specific phase of the innovation funnel. A collaboration only works when two teams select each other's team number. This means you should talk to each other before selecting this option. At the beginning of next round, your team will receive the number of new projects of the other team as a bonus on top of your own (new) projects. That number can also be negative.

An example:




## 2.21 SUBMIT

You can now submit your decisions. In case you made a mistake, you can (re)submit until the deadline. We'll only take into account the last submission.


Team details:
Team:
Jan
Year
2013
Submit Decisions

# 3. ASSIGNMENTS

It is quote common for universities to build a larger program around the game. This will increase the likelihood of reaching the learning objectives. We advise instructors or company managers to get in contact with Innovative Dutch to create a specific program that suits your needs.

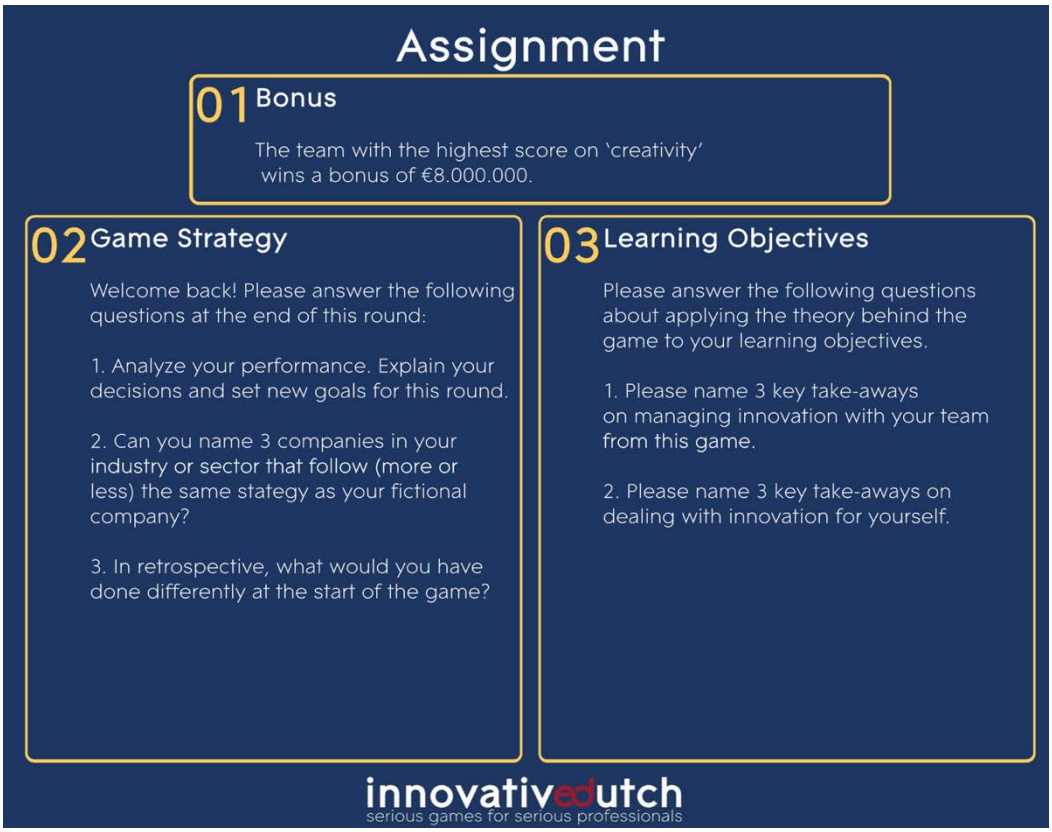
## 3.1 TYPES OF ASSIGNMENTS

There are 4 categories of assignments built into the game. They can be used at any time.

- Analysis: analyse your performance in detail.
- Strategy: create and redesigning a strategy.
- Literature Review: literature study on innovation (management).
- Reflection: reflection.

It is worthwhile mentioning that none of the assignments have a direct impact on the game result. Usually, the assignments will be used by the instructors/lecturers for grading and feedback purposes.

Usually, we'll include predefined assignments in the game. They can be as follows:


Assignment
01 Bonus
The team with the highest score on 'creativity' wins a bonus of €8.000.000.
02 Game Strategy
Welcome back! Please answer the following questions at the end of this round:
1. Analyze your performance. Explain your decisions and set new goals for this round.
2. Can you name 3 companies in your industry or sector that follow (more or less) the same stategy as your fictional company?
3. In retrospective, what would you have done differently at the start of the game?
03 Learning Objectives
Please answer the following questions about applying the theory behind the game to your learning objectives.
1. Please name 3 key take-aways on managing innovation with your team from this game.
2. Please name 3 key take-aways on dealing with innovation for yourself.
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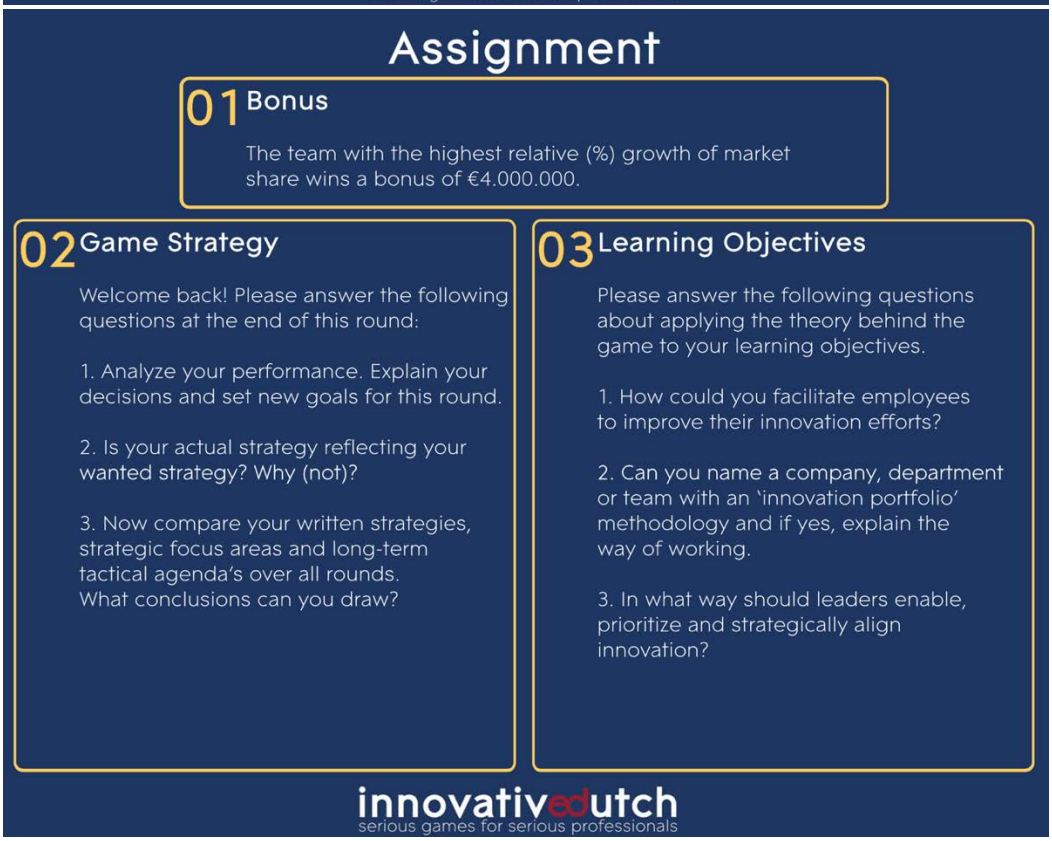
Assignment
01 Bonus
The team with the highest relative (%) growth of market share wins a bonus of €4.000.000.
02 Game Strategy
Welcome back! Please answer the following questions at the end of this round:
1. Analyze your performance. Explain your decisions and set new goals for this round.
2. Is your actual strategy reflecting your wanted strategy? Why (not)?
3. Now compare your written strategies, strategic focus areas and long-term tactical agenda's over all rounds. What conclusions can you draw?
03 Learning Objectives
Please answer the following questions about applying the theory behind the game to your learning objectives.
1. How could you facilitate employees to improve their innovation efforts?
2. Can you name a company, department or team with an 'innovation portfolio' methodology and if yes, explain the way of working.
3. In what way should leaders enable, prioritize and strategically align innovation?
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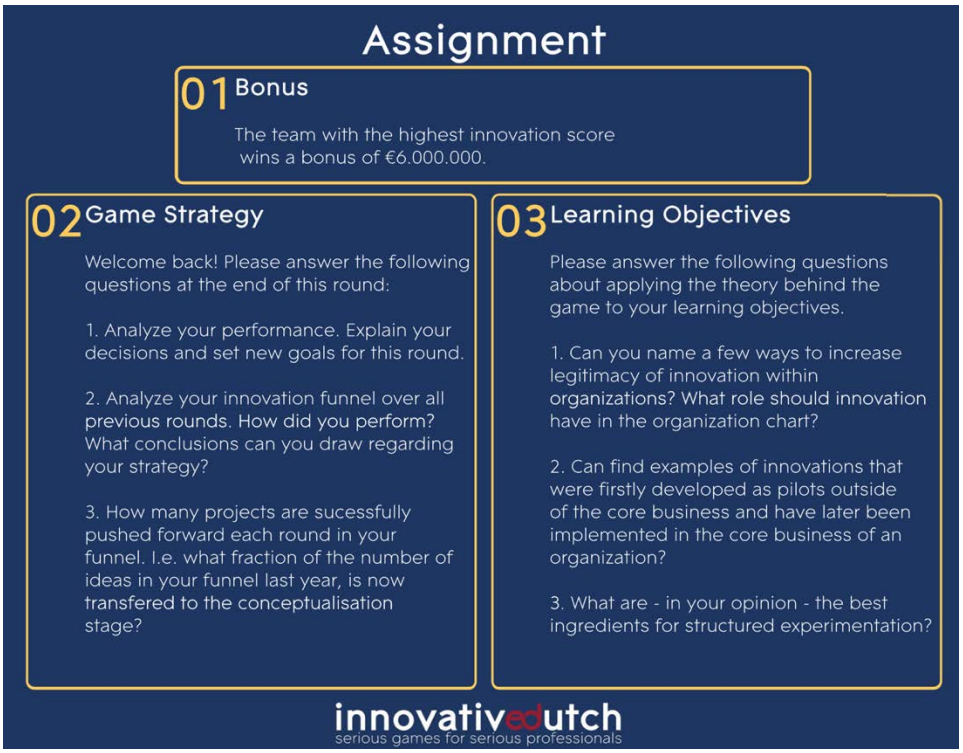
Assignment
01 Bonus
The team with the highest innovation score wins a bonus of €6.000.000.
02 Game Strategy
Welcome back! Please answer the following questions at the end of this round:
1. Analyze your performance. Explain your decisions and set new goals for this round.
2. Analyze your innovation funnel over all previous rounds. How did you perform? What conclusions can you draw regarding your strategy?
3. How many projects are sucessfully pushed forward each round in your funnel. I.e. what fraction of the number of ideas in your funnel last year, is now transfered to the conceptualisation stage?
03 Learning Objectives
Please answer the following questions about applying the theory behind the game to your learning objectives.
1. Can you name a few ways to increase legitimacy of innovation within organizations? What role should innovation have in the organization chart?
2. Can find examples of innovations that were firstly developed as pilots outside of the core business and have later been implemented in the core business of an organization?
3. What are - in your opinion - the best ingredients for structured experimentation?
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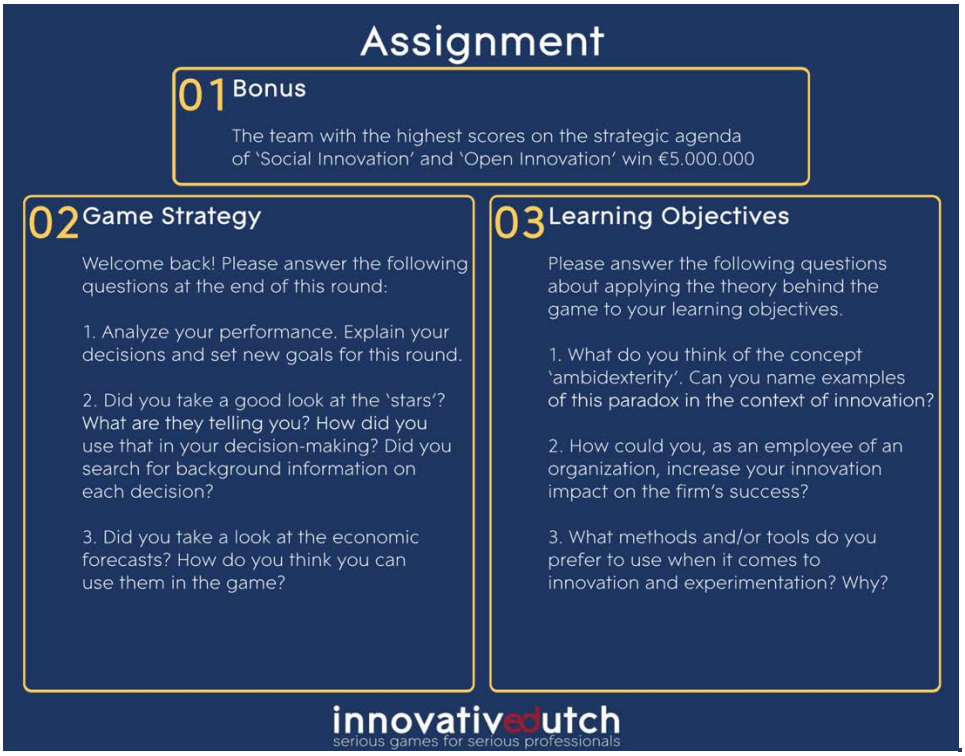
Assignment
01 Bonus
The team with the highest scores on the strategic agenda of 'Social Innovation' and 'Open Innovation' win €5.000.000
02 Game Strategy
Welcome back! Please answer the following questions at the end of this round:
1. Analyze your performance. Explain your decisions and set new goals for this round.
2. Did you take a good look at the 'stars'? What are they telling you? How did you use that in your decision-making? Did you search for background information on each decision?
3. Did you take a look at the economic forecasts? How do you think you can use them in the game?
03 Learning Objectives
Please answer the following questions about applying the theory behind the game to your learning objectives.
1. What do you think of the concept 'ambidexterity'. Can you name examples of this paradox in the context of innovation?
2. How could you, as an employee of an organization, increase your innovation impact on the firm's success?
3. What methods and/or tools do you prefer to use when it comes to innovation and experimentation? Why?
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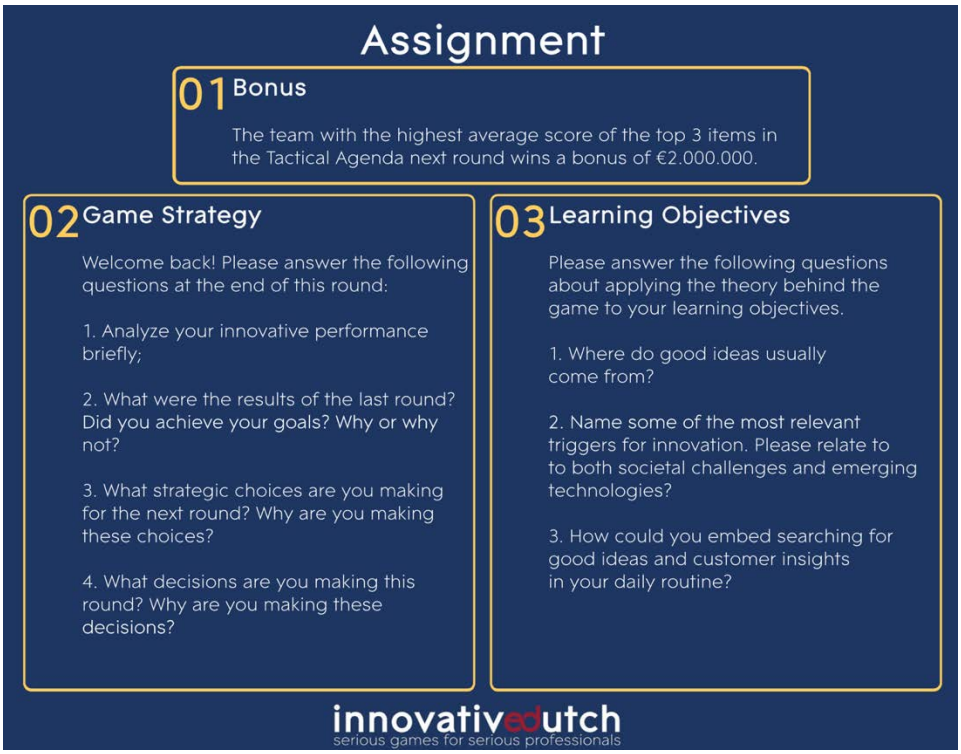


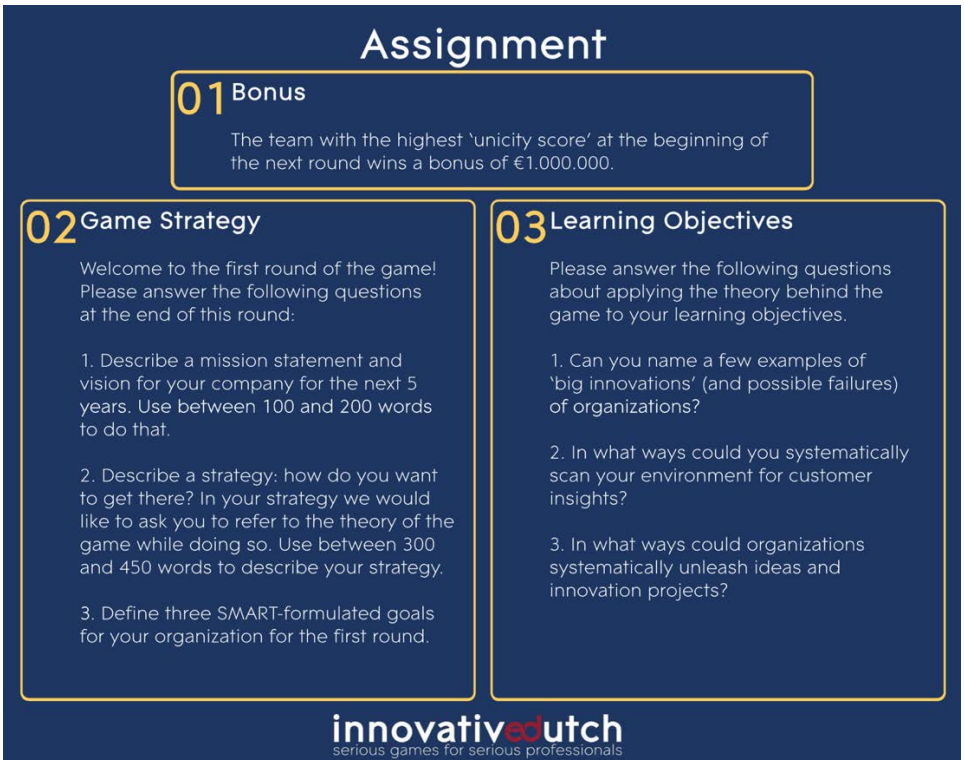


## 3.2 ANALYSIS ASSIGNMENT

In order to answer the following questions, it is necessary to open the current report and all previous reports using URLs from that round.

- **Basic analysis: is your actual strategy reflecting your wanted strategy?**
  - What did you write down in the 'strategy part' last round?
  - How did you perform on the 'strategic positioning' graphs?

  - How do you perform on the long-term and short-term tactical agenda's?
  - If you compare the first three questions, what conclusions can you draw?
  - Now compare your written strategies, strategic positioning graphs and long-term tactical agenda's over all rounds. What conclusions can you draw?
  - If you look at the table under 'strategic positioning', where are you going to focus on in the next round if you want an unchanged strategy?
- Advanced analysis: what are the most important indicators telling us?
  - Analyze your innovation funnel over all previous rounds. How did you perform?
  - What conclusions can you draw regarding your strategy?
  - Analyze the 'innovation process' radars over all previous rounds. How did you perform?
  - What conclusions can you draw? Also, in relation to your funnel performance?
  - Analyze your market share and sales graphs over all previous rounds. How did you perform?
  - What conclusions can you draw?
  - Analyze your creativity and innovation scores over all previous rounds. How did you perform?
  - What conclusions can you draw?
  - If you compare the results of your sales with your innovation and creativity scores, what do you see? Can you explain that?
  - Take a look at your business valuation over the last couple of rounds. What do you generally think of this indicator?
  - How will you improve your business valuation in the next few rounds? Where will you focus on?
  - What categories (8 types of innovation processes) are you going to focus on in the next round, give your results on the innovation funnel and sales?
  - How are you going to reformulate your tactics (and decisions) to perform better next round?
- Expert analysis: what are the details telling us?
  - Go to 'Resources' -> 'Database' and take a look at the different decisions. Did you take a good look at the 'stars'? What are they telling you? How did you use that in your decision-making? Did you search for background information on each decision?
  - Can you create any other indicators by doing some basic calculations on for instance your funnel, your sales and your scores? For instance: the ratio between incremental and radical products for each stage? What do these indicators tell you?
  - Did you take a look at the economic forecasts? How do you think you can use them in the game?
  - Do you see any decisions that are synergetic? That means: if you combine them, the effect would be much bigger? Which ones?
  - Do you see any decisions that have more likely a longer lasting effect in the game? Which ones?

- Did you use collaborations to its fullest extend? How? With whom did you collaborate? Did you also collaborate with other teams to foresee the blue or purple oceans they are getting into?
- Did you read the strategies of other teams? Can you foresee, based on their strategies, what corners of the 'strategic positioning' graphs they will be in?
- Do you understand the meaning of 'secondary types' in the 'Database'? How did you use this to your advantage?
- Did you use the 'memory' of the game, i.e. the fact that the game will still remember previously taken decisions?
- Did you use the 'product portfolio'-overview under sales? How do you think you can increase the number of 'cash cows' and 'dogs' product sales?
- To what extend did you use the feedback of our facilitator? Did you ask any questions to other teams or to our experts? Why or why not?
- Did you use the AI-feedback? How did you use it? Why or why not?

## 3.3 STRATEGY ASSIGNMENT

In order to answer the following questions, it is necessary to open the current report and all previous reports using URLs from that round.

- Describe a mission statement and vision for your company for the next 5 years. Use between 100 and 200 words to do that.
- Describe a strategy: how do you want to get there? In your strategy we would like to ask you to use a reference to both the 8 types of innovation used in this game and to the innovation funnel. You can also use another strategy formulation model, such as the BCG-matrix, Ansoff-matrix or Treacy & Wiersema. Use between 300 and 450 words to describe your strategy.
- Answer the following tactical questions:
  - Analyze your innovative performance briefly;
  - What were the results of the last round?
  - Did you achieve your goals?
  - Why or why not?
  - What strategic choices are you making for the next round?
  - Why are you making these choices?
  - What investments are you making this round?
  - Why are you making these investments?
- Define three SMART-formulated goals for your organization for the first round.

## 3.4 LITERATURE STUDY

There is a different assignment for each round in this category:

**In case literature is provided in the course:**

- Summarize each article in a few sentences and name at least three key learnings from each of them. Are the learnings applicable to the game?
- Select three papers and compare them in a table, for instance by naming the advantages and disadvantages of each of them for innovation strategies.
- Please search for a couple of new articles related to 'corporate venturing' on scholar.google.com. How can they influence your strategy?
- Can you describe your team's 'unique way of working' (a method you use every round for instance)? Find at least three sources that back up your 'innovation process'.

In case the literature is not provided in the course:

**Round 1:**

Scan the web for three recent blog posts that are about the role of marketing in innovation (management). Summarize the articles and name at least three key learnings from them. Are the learnings applicable to the game? How? Use maximum 200 words.

**Round 2:**

Scan the web for articles and news about the role of creativity in the innovation funnel or innovation process. Name at least 3 articles and build your own opinion. Why is, or isn't, ideation important for an innovative strategy. How will this impact your strategy in the game? Use between 150 and 250 words.

**Round 3:**

Find at least 3 academic papers on scholar.google.com about co-creation, crowdsourcing and crowdfunding. Name the sources. Make a comparison between the three in a tabel, for instance naming the advantages and disadvantages of each. Use between 200 – 300 words.

**Round 4:**

Write a short literature review on corporate entrepreneurship, intrapreneurship, corporate venturing. Use and name sources of at least 4 academic papers on scholar.google.com. How could the review be used for your strategy? Use between 200 – 300 words.

**Round 5:**

Write an opinionate peace about the 'new business modeling'. Is it a hype or a trend? Use at least 3 newspaper articles and 3 academic papers found on scholar.google.com to strengthen your opinion. How could this influence your strategy? Use between 200 – 300 words.

**Round 6:**

Write a "white paper" on innovation processes: 'an #-step guide to innovation'. Design your own process and explain how and where it could be best used. Use at least 3

references to existing innovation processes. Make a visual of your process and explain how it works. Use between 200 – 300 words.

## 3.5 REFLECTION ASSIGNMENT

**In case you're only doing a reflection once:**

- Take a look at the table in chapter 1.3 of the Instruction Guide. Score every team member on all 15 elements.
- Review your team's performance during the game. Please write at least three different STARR-reflections (200-300 each) to reflect on certain situations.
- Please write down one personal goal for the future for each team member regarding innovation management.

**In case you're doing this every round:**

Round 1:

Take a look at the table in chapter 1.3: behavior. Score every team member on all 15 elements: are you awakening, accelerating, advancing or adapting?

Round 2:

Reflect as a group on your team behavior on the topic "collaborative". Name at least one situation that was about collaboration and use the STARR-model to reflect on that situation. Please define 3 tasks for the group to work on during this round.

Round 3:

Reflect on the goals of last round. Now do the same as last round on the topic "imaginative".

Round 4:

Same as last round, but the new topic will be: inquisitive.

Round 5:

Same as last round, but the new topic will be: persistent.

Round 6:

Same as last round, but the new topic will be: discipline.

## 3.6 EXTRA TASKS

There is a different assignment for each round in this category:

| Round | Focus topic in game | Example tasks for Business-related courses | Example tasks for Engineering-related courses |
|---|---|---|---|
| 1 | Marketing, Branding, Ideation | 1. Market- and Desk research<br>2. Idea Generation / Concept Development<br>3. Target Group Analysis for concept<br>4. Positioning of concept<br>5. Marketing mix for concept | 1. Idea generation<br>2. Theoretical framework<br>3. Concept development<br>4. Marketing plan |
| 2 | Technology, Co-creation | 5. Implementation plan for concept.<br>6. Business plan for concept.<br>7. Full Business Model Canvas for concept | 1. Concept Design<br>2. Product Design<br>3. Prototyping |
| 3 | Social Innovation | 8. Organization plan for concept or Canvas. | 4. Using the crowd to enhance product design.<br>5. Using human capital to enhance product design. |
| 4 | Entrepreneurship, Corporate Venturing | 9. (Corporate) entrepreneurial / investment plan for organization.<br>10. New Product Development for organization. | 6. Business plan for product. |
| 5 | Open Innovation | 11. Vision/strategy for organization.<br>12. Innovation Management plan for organization. | 7. Strategy for product and business.<br>8. In- and outsourcing plan |
| 6 | Business Model Innovation | 13. New Business Development plan for organization.<br>14. Future profit models for organization.<br>15. Spin-off/-out strategy. | 9. Business Model Canvas.<br>10. Profit model plan. |

# FREQUENTLY ASKED QUESTIONS

Below, you'll find some of the questions that have been asked most frequently.

## 4.1 INTERFACE

1. We cannot open something.

> Please contact us at info@innovativedutch.com if something is not working normally and we will try to solve it for you.

2. Is there a way for our team to get the older reports from previous years?

> No, there isn't. Please download the reports and save them each round.

3. We made a mistake. Can we resend our submissions?

> If you find out the mistake - or if you just want to change something to your tactics - you can always resubmit the last round up to the deadline of the that round. We will only look at the last submissions received.

## 4.2 BANKRUPTCY

5. Due to bad decisions we went bankrupt in the third week, what are the possbilities for survival?

> You'll have to talk to your instructor or university teacher. If he or she agrees to it, we'll let you back in.

## 4.3 CONTEXT

6. How long have we been operating as a company?

> Keep in mind that bringing a product from one stage to another takes 1 year in the game. The fact that you currently have projects in all stages (including dogs and cash cows) assumes you are in business for at least 5 years.

7. I went through all the materials and have started to analyse the data but I was wondering about the product we are selling. Secondly, do we have any idea of the products' life cycles?

> The product itself doesn't really matter, because the game looks at the innovation process from a more abstract perspective. However, we usually tell players to imagine they are in the Robotics sector where R&D is moderately slow (4 years, each phase of the funnel represents one year), the life cycle is relatively

fast (1-4 years, depending on your investments, resulting in stable cash cows and declining dogs), and where turnover is relatively small.

## 4.4 STRATEGY

8. How can we create our own strategy & how can we know that the strategy that we have is right?

You'll have to find out a strategy based on the innovation (management) literature (or your intuition) and then try to take decisions in the game that are in line with that. In the next round, reflect on your strategy by using the annual report. If you're not seeing the results you had expected to see, you'll need to adjust the decisions that you'll take. There is no such thing as a right strategy: this depends on your competitors and the current market situation.

## 4.5 DECISIONS

10. Will we still have the decisions of last round in the new rounds?

Yes, they will exist until the end. They will continue to influence your strategy on the background.

11. In the decisions, they are about all the company's products (including the dogs and the cows) or the ones we are newly producing only?

The decisions effect everything in your company. But it depends on the decision. This is explained with the stars in the knowledge management system. The stars indicate whether or not a decision is effecting a certain stage in the funnel. So for instance: if you want to invest in the commercialisation stage, you need to invest in decisions that have more stars for that stage.

12. Does each decision work only in the specified category?

Each decision is categorized under one of the innovation types. For instance [tapping into] "Scientific Research" is labeled under Technology. However, if you take this decision, it will not only contribute yo your company's strength on the category "Technology" but also to a serious extent on the category "Open Innovation" - and perhaps to some extent to other categories. If you read the literature on a single topic you will find out why.

So, if you would take only the decision "Scientific Research" in a specific round, your tactical agenda in the next report would say: 1. Technology and 2. Open Innovation, etc. It's a way to invest indirectly in categories that are not yet in the game or to enhance your strategy.

The numbers refer to the 8 types of innovation:

1. Marketing & Branding

2. Ideation

3. Technology

4. Co-creation

5. Social Innovation

6. Entrepreneurship

7. Open Innovation

8. Business Model Innovation

## 4.6 INNOVATION BUDGET

14. How is the budget calculated? We got increasing sales but decreasing innovation space.

The budget basically is the difference between the spendings on innovation of this year and the spending on innovation of last year.

If your sales increase, it usually results in an increased budget. However there are some mechanisms in place that may give you (temporary, they are deducted in the rounds after) increases in budget in order to make sure that your company stays competitive.

15. How can I make sure that I'm not spending too much on a certain type of Innovation?

You can't spend too much on 1 type of innovation, you can only spend too much if you are spending more than your budget allows you. However, it is wise to spread your investment over 2-4 different types to be able to invest in every aspect of your funnel.

16. We are lower on the Sales (and ranking) than Team number X, but we have a higher budget. How is that possible?

Because your current (and past) spendings on innovation are (much) lower than the current (and past) spendings of Team X. If you are close on sales, that means that your team achieved almost the same with less investment, thus meaning you made smart decisions. You still have space to increase your innovation spendings giving you advantage over the other team.

17. If you do not invest the budget, are unspent amounts carried forward to the following year? Or are they lost?

Yes, the unspent budget will be carried forward.

## 4.7 INNOVATION FUNNEL

19. How/why would a company lose a product, either radical or existing?

Just like in every other sector, also these products have a certain lifetime. Most products in this game will be in your portfolio for a number of years. During the first year, they are (in BCG Matrix-terminology) in your "stars", which is also the last stage of the funnel. So, these are only the new radical/incremental products that you have created in the last year.

The year after, some of your products move to being "cash cows" (existing products) or "dogs" (declining products). The number of products you will be able to keep profiting from is dependent on your decisions. For instance: investing in quality, service or reputation (long-term) will keep your products longer in your portfolio.

20. We have invested heavily into conceptualization and development, but this is not reflective in the no. of projects in our innovation funnel. Are we doing something wrong or are these numbers not very affected by our decisions?

Normally, investments should lead to an increase in the number of projects in these stages of the funnel, compared to the other stages of your funnel.

There can be few reasons why this is not (directly) visible can be numerous, such as the fact that the number of projects in conc/dev is dependant on the number of projects in the ideation stage in earlier years. Also, it could be that the economic circumstances or some other company-specific variables (such as reputation) are worrisome and therefore pressing the number of projects in all stages downwards. The reason could also be that the specific decisions you take have a stronger effect on the longer term.

If you scan all the literature, you'll find numerous reasons that could cause this behaviour. More important than addressing the specific problem is to try to understand how the dynamics of innovation management work, find a balance in using them in your strategy and reflecting on them.

21. At what stage are we in the innovation funnel currently?

The innovation funnel is a "photo" of the current status of all your projects. So, you currently have a number of projects in ideation, a number in conceptualisation, and so on.

22. We have invested strongly in the Commercialization Stage. How is it possible we are not bringing as much products to the market as other teams?

The maximum number of projects you can bring to the market next year is limited by the number of projects in the Development Stage this year. So investing in

Development will indirectly also help to bring products to the market next year. So you'll always have to invest in having a balanced funnel.

# INSTRUCTOR'S MANUAL

## 5.1 SECONDARY OBJECTIVES

The game also intends to bring a radical new way of learning to students and it aims to enhance their learning experience. These are called secondary objectives:

1. Individual learning: the games enhance a personalized learning experience. Through a wide range of possible combinations and choice in the game, and personalized feedback, players will be able to adjust the learning outcomes to their individual preferences.
2. Industry-University collaboration: the games enhances a practical approach towards business, entrepreneurship and innovation by simulating real-world happenings in a game-environment. Moreover, the games are able to work with real-world cases and are designed and tested by professionals from the field. They are actualized on the fly and increase collaboration between industry and university.
3. Interactive learning environment: the games are designed on a virtual and interactive interface that can be accessed from anywhere and anytime.

## 5.2 TYPE OF GAME

The Innovation Management Game is an Academic Simulation-based Game

1. Academic: it's primary audience is academic students or academically-educated professionals
2. Simulation-based: the dynamics of the game are largely based on a complex simulation of real-world systems, processes, problems and challenges.
3. Game: a battle in which participants compete against each other using a number of iterations with increasing complexity and a scoring system.

## 5.3 TARGET GROUPS

This game is oriented at students in higher education preferably with 0-4 years background in business studies or relevant courses. We assume the basics of organizational science are known to the players (through school or experience) or are taught at the same time as the game roll-out. This game is also oriented at business professionals in training: people that would like to become better innovation professionals.

The game is best played in the context of engineering. It has a focus on innovation management in a (high-)tech business-to-consumer market. The terminology is slightly focused towards an environment of technical development. Study programs that are most likely to get the most out of this game:

- Business Administration
- Small Business & Retail Management
- Innovation Management

- Industrial Engineering
- Mechanical Engineering
- Public Management
- Management and Leadership
- Marketing
- Commercial Studies

## 5.4 GROUP SIZES

The game is usually played with 4-10 groups battling against each other. When there are more than 11 groups, several games will run next to each other (results are still comparable). The group size is 3-5 players; however it can be played with every possible number of group members: 1-many. Within one game a maximum number of 10 teams can compete against each other.

## 5.5 TIME FRAME

Each round takes about 1-3 hour to complete, depending on the number of assignments that are included in the gameplay. Usually, we set deadlines beforehand and your team must deliver the results before the deadline of the next round. The rounds can be played over a longer time span, for instance once a week, or a shorter time span, for instance 5 rounds in one day.

## 5.6 LOCATION

The longer games, with intervals of at least 1 day, can be played online, worldwide. It is advisable to form teams that know and see each other in real life to make discussions about the strategy more liveable. Moreover, collaborations only work effectively when agreed upon in real life. Shorter games, such as a pressure-cooker-workshop, need physical attendance of the game manager and all the players in order to work efficiently.

## 5.7 MATERIALS

The game is played on a computer or tablet, so every team needs to have access to at least one device with broadband internet access.

## 5.8 GAME MANAGERS

Every game has a game manager: an expert that will provide feedback to every team after every round and that is available for questions during the game. The game manager cannot interrupt in the game algorithm, but is able to adjust or reset mistakes. In physical sessions, he/she will walk around to ask questions, give feedback and enhance the game experience.

## 5.9 FULL COURSE PROGRAMS

We usually suggest to run the games in one of the following three formats:

- Pressure Cooker Format (3 days - 2 weeks)
- High Intensity Format (3 weeks)
- Standard Format (6 weeks)

Our games are always thoroughly integrated with the curriculum. Please find example programs of our games below:

2-week program:

| Round | Week | Topics | Lecture | Start | Support | Finish | In-game written assignment | *Grading assignment* | Feedback |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Marketing & Branding, Ideation | *Monday 10-11 Introduction* | Monday 13:00 | Monday 11-13 Kick-off Session | Tuesday 13:00 | Strategy & Goals | | Wednesday before 13:00 |
| 2 | 1 | Technology, Co-Creation | *Wednesday 13-16 Innovation Processes* | Wednesday 13:00 | | Thurday 13:00 | Strategy & Goals | | Friday before 13:00 |
| 3 | 1 | Social Innovation | | Friday 13.00 | Friday 10-13 Feedback Session* | Friday 18:00 | Strategy & Goals | | Monday before 13:00 |
| 4 | 2 | Entreprenurship | *Monday 13-16 Open vs. Closed Innovation* | Monday 13:00 | | Tuesday 13:00 | Strategy & Goals | | Wednesday before 13:00 |
| 5 | 2 | Open Innovation | | Wednesday 13:00 | | Thurday 13:00 | Strategy & Goals | | Friday before 13:00 |
| 6 | 2 | Business Model Innovation | | Friday 13.00 | | Friday 18:00 | Strategy & Goals | *Assignment 2: Analysis* | |

3-week program

| Round | Week | Topics | Lecture | Start | Support | Finish | In-game written assignment | *Grading assignment* | Feedback |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Marketing & Branding, Ideation | *Monday 10-11 Introduction* | Monday 13:00 | Monday 11-13 Kick-off Session | Tuesday 18:00 | Strategy & Goals | | Wednesday before 12:00 |
| 2 | 1 | Technology, Co-Creation | | Wednesday 13:00 | | Friday 18:00 | Strategy & Goals | | Monday before 12:00 |
| 3 | 2 | Social Innovation | *Monday 10-12 Innovation Processes* | Monday 13:00 | Monday 13-16 Feedback Session* | Tuesday 18:00 | Strategy & Goals | | Wednesday before 12:00 |
| 4 | 2 | Entreprenurship | | Wednesday 13:00 | | Friday 18:00 | Strategy & Goals | *Assignment 1: Teaching Case* | Monday before 12:00 |
| 5 | 3 | Open Innovation | *Monday 10-12 Open vs. Closed Innovation* | Monday 13:00 | | Tuesday 18:00 | Strategy & Goals | | Wednesday before 12:00 |
| 6 | 3 | Business Model Innovation | | Wednesday 13:00 | | Friday 18:00 | Strategy & Goals | *Assignment 2: Analysis* | |

6-week program:

| Round | Week | Topics | Lecture | Start | Support | Finish | In-game written assignment | *Grading assignment* | Feedback |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Marketing & Branding, Ideation | *Tuesday 13-14 Introduction* | Tuesday 16:00 | Tuesday 14-16 Kick-off Session | Friday 12:00 | Strategy & Goals | | Monday before 12:00 |
| 2 | 2 | Technology, Co-Creation | *Tuesday 13-16 Innovation Processes* | Tuesday 16:00 | | Friday 12:00 | Strategy & Goals | *Assignment 1: Analysis* | Monday before 12:00 |
| 3 | 3 | Social Innovation | *Tuesday 13-16 Innovation Teams* | Tuesday 16:00 | Tuesday 12-15 Feedback Session* | Friday 12:00 | Strategy & Goals | | Monday before 12:00 |
| 4 | 4 | Entreprenurship | *Tuesday 13-16 Corporate Venturing* | Tuesday 16:00 | | Friday 12:00 | Strategy & Goals | *Assignment 2: Literature review* | Monday before 12:00 |
| 5 | 5 | Open Innovation | *Tuesday 13-16 Open vs. Closed Innovation* | Tuesday 16:00 | | Friday 12:00 | Strategy & Goals | | Monday before 12:00 |
| 6 | 6 | Business Model Innovation | *Tuesday 13-16 Strategic Innovation* | Tuesday 16:00 | | Friday 12:00 | Strategy & Goals | *Assignment 2: Reflection* | |

Please note that the feedback sessions are not included in the basic fee, as are grading the assignments, which is typically done by the university professors.

## 5.10 REGISTRATION

Players should be registered with at least their names and e-mail addresses before the start of the game. After showing interest in the game, we'll get in contact to introduce you to our registration process so that we can set-up the game for you.

## 5.11 TEAMS

The players should be placed in teams before the start of the game. We need to see those teams. When the game has started, it's not possible to switch teams anymore.

## 5.12 TEAM NAMES

It is possible to choose a team name if wanted. This is only possible beforehand and not after starting the game. Please contact the game manager if you would wish to pursue this option.

## 5.13 DEADLINES

We need to plan the deadlines of each round beforehand. They will be communicated through the university guide or e-mail.

## 5.14 WORKSHOPS

There is a possibility to have one of our experts introducing the game, playing a demo round, being present at a feedback session and leading the final session. Please get in contact with us if you would wish this opportunity.

## 5.15 INFORMATION

We'll handout necessary information to the players before starting the game in order for them to prepare playing the game.

## 5.16

Pre-work Package

In order to get the most out of the simulation, you are kindly asked to prepare yourself for the program. Please follow these steps to prepare yourself:

1. Log in to your team's game dashboard and take a look at the information that is already available. The dashboard contains a) details about the program, b) the first annual report, c) first assignment, d) the decisions you can take in the first round and e) the manual of the game, which explains the game scenario and gameplay. You will receive the login information for your team separately.
2. Please read the following papers in order to acquaint yourself with theory on bringing innovation to the market:
    a. Lichtenthaler, U. (2011) - Open Innovation: Past Research, Current Debates, and Future Directions;
    b. Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. (2009) - Marketing Under Uncertainty: The Logic of an Effectual Approach;
    c. Katz, G. (2011) – Rethinking the Product Development Funnel;
    d. Cooper, R.G. (2016) - The Stage-Gate® System: A Road Map from Idea to Launch – An Intro & Summary;
    e. Crossan & Apaydin (2010) - A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature;
    f. M.P. Hekkert et al. (2007) - Functions of innovation systems: A new approach for analysing technological change
    g. Saebi, T. & Foss, N. (2015) – Business Models for Open Innovation: Matching heterogenous open innovation strategies with business model dimensions