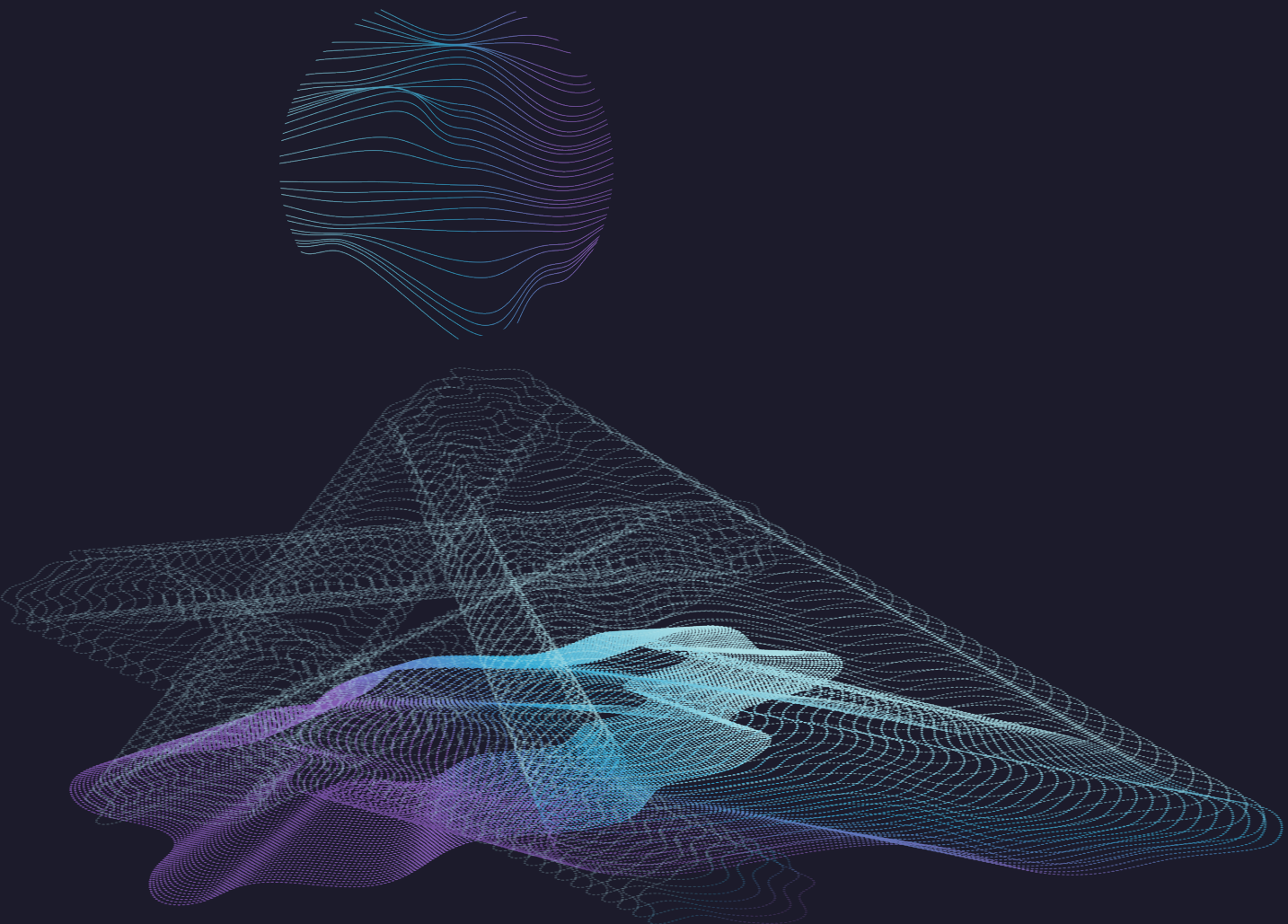


# The Fundamental Principles of Startups Innovation Evaluation

Real Estate  
Construction  
Finance



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# Innovation Evaluation

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Deniz Karahan

# The Fundamental Principles of Startups Innovation Evaluation

1<sup>st</sup>. Edition

2023

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**Content**

- 1. What is innovation and where does it come from? ..... 6
- 2. The characteristics of innovative people..... 8
- 3. Evaluation Method ..... 11
- 4. Assessed Business Models..... 13
- 5. Service & Products..... 19
- 6. Innovation Levels..... 21
- 7. The basic question of business idea/business model ..... 23
- 8. Factors ..... 34
- 9. The evaluation process..... 35
  - 9.1 Uniqueness ..... 35
  - 9.2 Disruption ..... 37
  - 9.3 Technology ..... 39
  - 9.4 Human capital ..... 40
  - 9.5 Market needs ..... 47
  - 9.6 Solving problems ..... 48
  - 9.7 Process optimization ..... 49
  - 9.8 Sustainability ..... 56
  - 9.9 Functionality ..... 59
  - 9.10 Compatibility ..... 60
  - 9.11 Feasibility..... 60
  - 9.12 Reliability ..... 60
  - 9.13 Data Management..... 61
- 10. The innovation development process ..... 61
- PropTech Academy Association ..... 64
- Publications ..... 66
- Source & References ..... 67
- List of Figures and Table..... 67
- List of Abbreviations..... 67
- Index..... 67

## 1. What is innovation and where does it come from?



Figure 1: Innovation roadmap

Innovation is the introduction of new ideas, methods, or products. It refers to the process of creating something new or improving upon something that already exists. Innovation can come from a variety of sources, including:

1. **Research and development:** This is the most common source of innovation. Companies and organizations invest heavily in research and development to create new products, services, or technologies.
2. **Entrepreneurship:** Entrepreneurs are individuals who identify a need or opportunity in the market and create a new business to meet that need. They are often considered the driving force behind innovation.
3. **Social and cultural influences:** Innovation can also come from social and cultural changes. For example, the rise of the internet and digital technologies has led to many new innovations in communication, entertainment, and commerce.

4. **Accidents and serendipity:** Sometimes, innovation happens by accident or through serendipity, as researchers and inventors stumble upon new ideas and techniques through trial and error.
5. **Open Innovation:** It refers to the process of collaborating externally, with partners such as suppliers, customers, universities, and research centers, to generate new ideas, technologies, and business models.

Innovation can lead to new products, services, or technologies that can improve people's lives, create new jobs, and drive economic growth.

The role of innovation becomes even more important for organizational survival due to the challenges of the 21st century. The rise of information technologies and the progressing globalization of markets transform economies and fuel digitization, automatization, and connectivity: the value creation shifts from capital-intensive to information-intensive industries. Firm innovativeness refers to an organization's overall capability to engage in new ideas and concepts that may result in the implementation of new processes or the introduction of new products or services. We develop an enhanced, more holistic measure of firm innovativeness with broader applicability. We define firm innovativeness as an organization's overall capability to engage in new ideas and concepts that may result in new processes' implementation or new products' introduction. Property technology companies have come into the market with innovative, disruptive, and sustainable business models, creating ground-breaking momentum.

Creativity draws on freedom of thought, the ability to generate new ideas, a willingness to seek out learning opportunities, and ability to see new perspectives, and the capability to think broadly and strategically. Innovation builds on creativity, translating creative thought into something useful by drawing on real-world expertise such as the dissemination of information. It requires a degree of adaptability, along with effective communication and collaboration skills. Several frameworks have suggested that creativity and innovation are important skills for the 21<sup>st</sup>-century worker along with curiosity and risk-taking expanding creativity and innovation to include entrepreneurial thinking.

The classical characteristics of innovation are that it:

1. is an individual process,
2. is hidden in the R&D laboratory,
3. is ungovernable and uncontrollable,
4. is more or less accidental,
5. is something that's been going on for ages,
6. does not correlate with trending or consumer/customer demand and insight,
7. does not correlate with corporate strategy or execution capabilities.



## 2. The characteristics of innovative people

Steve Tobak (2010) identifies ten characteristics and methodologies that help to define innovative people and how this influence innovative thinking:

**1. Standing on the shoulders of giants:** Contrary to popular belief, innovation is often far more evolutionary than revolutionary, and more practical and craftier than breakthrough invention. Most of the time you're redefining the use of somebody else's idea. For example, Steve Jobs didn't invent the graphical user interface (GUI) or the computer mouse, but when he saw them demonstrated, his mind was probably racing with practical applications.

**2. Left brain-right brain balance:** The whole left brain-right brain thing is a myth, but metaphorically speaking, innovation often springs from a combination of inspirational thought (right brain) and practical need (left brain). They say necessity is the mother of invention; this is probably truer for innovation.

**3. Belief that you're special:** Many, if not most, innovative people have this sort of childish belief that they're special, destined for great things. The thought of doing something new and different – changing the world, as it were – can be daunting. Unless you truly believe it's your destiny, you'll probably be too scared to even try. Bill Gates didn't invent the PC operating system and he certainly didn't come up with the idea of licensing technology, but his business model – combining the two – made Microsoft one of the most valuable and powerful companies in the world.

**4. Questioning conventional wisdom or the status quo:** If you even mention how things are done or should be done to a true-blue entrepreneur or innovator, it's like nails screeching on a chalkboard.

**5. Vision:** Oftentimes, people just have a vision of how they think something should be. It's that simple. But they're also driven to see it through, as in the next bullet.

**6. Driven by the need to prove something:** Innovative people are definitely on a mission to prove something to somebody and half the time we don't even think they know who. Howard Schultz didn't invent coffee, espresso, or cappuccino, but he has certainly been an innovator in bringing all that to the masses through Starbucks.

**7. Problem-solving:** If you're not a problem-solver, you're probably not going to come up with anything that anybody will find useful. Control freaks are natural problem-solvers – they can barely walk down the street without seeing all sorts of things that can be done better.

**8. Passion:** Without passion and genuinely loving and caring about what you do, you simply won't have the resilience and stick with it to see the innovation of any magnitude through. It's never just an idea – you have to do stuff with it.

**9. Focused brainpower:** Athletes will tell you success is all about focus – you can't hit a 100-mph fastball or catch a 30-yard pass with defenders all up in your face without it. It's the same with innovation. Ironically, people who appear to be all over the map with Attention Deficit Disorder (ADD) symptoms can have rare moments of clarity when it all comes together.

**10. Work stamina:** There's loads of talk these days about working smarter, not harder, taking more breaks, and so on. While we are big believers that you should not kill yourself with work, if you don't enjoy working and work stamina isn't in your blood, you're not likely to innovate a thing.

Other sources of innovation are best discussed by Drucker (1985) in his classic book, where he identifies seven “wells” of areas where innovation and ideas can come. These are:

**1. The unexpected** – An unexpected success, an unexpected failure, or an unexpected outside event can be a symptom of a unique opportunity.

**2. The incongruities** – A discrepancy between reality and what everyone assumes it to be, or between what is and what ought to be, can create an innovative opportunity.

**3. Innovation based on process need** – When a weak link is evident in a particular process but people work around it instead of doing something about it, an opportunity is presented to the person or company willing to supply the “missing link”.

**4. Changes in industry and market structures** – The opportunity for an innovative product, service, or business approach occurs when the industry's or market's underlying foundation shifts.

**5. Demographics** – Changes in the population's size, age structure, composition, employment, level of education, and income can create innovative opportunities.

**6. Changes in perception, mood, and meaning** – Innovative opportunities can develop when a society's general assumptions, attitudes, and beliefs change.

**7. New knowledge** – Advances in scientific and non-scientific knowledge can create new products and new markets.

Drucker told us that we must innovate. However, he did not leave it there: he told us how we should approach innovation to build and maintain the success of our organizations with

the best sources of new ideas. Innovation is both conceptual and perceptual. The imperative is to go out to look, to ask, to listen. Successful innovators use both the left and right sides of their brains. They look at figures and they look at people. To be successful, Drucker wrote that an innovation has to be simple and it has to be focused. It should only do one thing or it confuses people and won't work. All effective innovations are breathtakingly simple. They should focus on a specific need that is satisfied and on a specific result that they produce. This makes innovation seem pretty straightforward, doesn't it?

Drucker indicated that effective innovations start small and that they should not try to be clever. Innovations try to do one specific thing. Starting small allows for adjustments. To start small, keep the requirements for people and money fairly modest. Innovations must be handled by ordinary human beings if they are to achieve any size and importance at all. Another key factor was to not try to innovate for the future but to innovate for the present. The innovation may have a long-term impact, but if you can't get it adopted now there won't be any future.

According to Drucker, three conditions must be met for an innovation to be successful, including:

1. Innovation is work. It requires knowledge, ingenuity, creativity, and so on. Plus, innovators rarely work in more than one area, be it finance, healthcare, retail, or whatever. Their work requires diligence, perseverance, and commitment.
2. To succeed, innovators must build on their strengths. They must look at opportunities over a wide range, then ask which of the opportunities fits them or this company. There must be a temperamental fit with the practitioner and a link to the business strategy.
3. Innovation is an effect on the economy and society, a change in the behaviour of customers, teachers, farmers, doctors, and people in general. Or it is a change in a process, in how people work and produce something. Innovation must always be close to the market, focused on the market, and market-driven. Innovation, by its nature, is risky, as is all economic activity. But defending what was done yesterday is far riskier than making it tomorrow. Innovators define risks and seek to minimize them. Innovations are successful to the extent that they systematically analyse the sources of opportunity, pinpoint the opportunity, and then exploit it, whether an opportunity has a small and definable risk or a larger but still definable risk. Successful innovators are conservative; they are not risk-focused, but rather opportunity-focused. (1)

### 3. Evaluation Method

Innovation is work. It requires knowledge, ingenuity, creativity, etc. Besides, innovators rarely work in more than one area – be it property technology, finance, real estate, construction, or another sector. Their work requires diligence, perseverance, and commitment. Innovation affects the economy and society. It involves a change in the behaviour of clients, teachers, farmers, and doctors – in other words, the community as a whole. Innovation may also involve a change in a process, in the way people work or how they manufacture products. Innovation must always be close to the market, focused on the market, and market-driven.

Innovation is, by its very nature, a high-risk undertaking, as is all economic activity. Innovators define risks and seek to minimize them. Innovations are successful when they systematically identify sources of opportunity and then exploit them – whether they entail a small and quantifiable risk or a larger but still quantifiable risk. Successful innovators take a conservative view of risk while focusing on realizing opportunities.

The innovation evaluation method refers to the process of assessing the potential value and feasibility of an innovation or new idea. This can involve various techniques such as market research, cost-benefit analysis, and risk assessment. The goal of innovation evaluation is to identify the strengths and weaknesses of innovation, as well as its potential for success in the market.

There are several different methods that can be used for evaluating innovation, including:

- a. **Concept testing:** This involves gathering feedback on the innovation from potential customers or stakeholders to assess its potential value and feasibility.
- b. **Business model analysis:** This involves evaluating the financial viability of the innovation and its ability to generate revenue.
- c. **SWOT analysis:** This method involves identifying the strengths, weaknesses, opportunities, and threats of an innovation.
- d. **Risk assessment:** This involves identifying and evaluating the potential risks associated with the innovation.
- e. **Benchmarking:** This method involves comparing the innovation to existing products, services or technologies in the market to understand its potential competitive advantages.

The method chosen will depend on the innovation itself, the stage of development and the resources available, but overall, the goal is to have a clear understanding of the innovation

potential and its readiness for implementation.

There are several methods that can be used to evaluate innovation in the property technology (PropTech) sector too. One approach is to use a multi-criteria evaluation method, which involves assessing a given PropTech solution against a set of predefined criteria. These criteria can include things like technical feasibility, market potential, scalability, and return on investment.

Another approach is to use a more qualitative evaluation method, such as user testing or expert reviews. This can involve gathering feedback from real users of a given PropTech solution, or from experts in the field, to assess its usability, effectiveness, and overall value.

A third approach is to use a business model evaluation method, which evaluates the business model of a certain PropTech solution, such as its revenue streams, customer segments, partnerships, and collaborations, to assess its long-term viability and scalability.

Ultimately, the choice of evaluation method will depend on the specific PropTech solution being evaluated and the goals of the evaluation. The best approach is to use a combination of different methods to comprehensively understand the innovation.

The property technology innovation evaluation method does not solely encompass classic definitions of innovation and general market requirements. Instead, it involves a new methodology developed using specific definitions of Property technology sectors and factoring in aspects such as uniqueness, disruption, technology, and human capital.

In connection with the International Property Technology Standards, the PropTech Academy Association has developed a new methodology to evaluate companies based on their level of innovation. It encompasses 12 categories and more than 200 criteria.

The evaluation method uses subjective criteria when assigning the score. It evaluates a range of data based on official and public company information – including business model, founding team, management team, service, and products.

The potential benefits of the certification process;

1. Becoming a certified supplier in your service and product lines
2. Improve the stock value
3. Improve value-added per employee
4. Improve return on assets

5. Minimize uncertainties
6. Increase employee morale
7. Increase market share
8. Improve customer satisfaction
9. Win the trust of your investors
10. Increase efficiency, effectiveness, and adaptability
11. Be more able to manage change with less resistance and build a resilient company
12. Improve sustainability and resilience
13. Increase the satisfaction of the stakeholders
14. Engage and empower people in the company
15. Increase the ability to attract partners, collaborators, and funding
16. Attract challenging and resourceful people to join the company
17. Enhance the reputation and valuation of the organization
18. Reduce legal expenses
19. Develop a more desirable and challenging culture
20. Improve process and system efficiency and effectiveness

## 4. Assessed Business Models

### 1. Developing digital tools to address the needs of the property technology sector

Developing digital tools to address the needs of the PropTech sector means creating and implementing technology solutions for the property industry. This can include things like property management software, virtual tours for real estate listings, and other digital tools that help make the process of buying, selling, or managing property more efficient and effective. These tools can be used to improve communication and collaboration between stakeholders, automate routine tasks, and provide data-driven insights to inform business decisions. The goal is to improve the overall experience and outcomes for users in the PropTech sector.

### 2. Developing technology-based innovative solutions for new and existing problems

It means creating new and advanced technological tools and systems to solve problems and improve the current PropTech market. This can include developing new software, platforms, and applications to address current pain points and improve the overall experience for customers and stakeholders in the PropTech industry. These solutions can be used to improve communication, automate routine tasks, and provide data-driven insights to inform business decisions. The goal is to create new and innovative technology-based solutions that can help to streamline operations and improve the overall efficiency and effectiveness of the PropTech sector.

### **3. Developing new business models for reducing bureaucracy between B2B and B2C**

It means creating new ways of doing business that can help to simplify and streamline the communication and collaboration between businesses and customers. This can include things like automating routine tasks, simplifying processes, and implementing digital tools that can help to improve communication and collaboration. The goal is to make it easier for businesses and customers to interact and do business together while reducing the administrative burden and red tape that can often slow down the process. This can be achieved by using new technologies and innovative solutions, such as automation, AI, and blockchain, that can help to reduce bureaucracy and increase the efficiency of the business process.

### **4. Developing a new service and product for sustainable properties**

It means creating new offerings that promote environmentally friendly and energy-efficient practices in the property industry. This can include things like energy-efficient building materials, renewable energy systems, and sustainable design concepts. The goal is to provide customers with products and services that can help to reduce their environmental impact, while also promoting long-term cost savings through reduced energy consumption. This can be achieved by using new technologies and innovative solutions, such as smart building systems, green roofs and walls, and sustainable transportation options. Additionally, it could also include certifications, labels, and ratings that can help customers identify and choose sustainable properties.

### **5. Developing new solutions to reducing the material consumption**

It means creating new methods and technologies to decrease the number of resources used during the construction and real estate development process. This can include using more efficient building techniques, recycling, and repurposing materials, or using alternative materials that have a lower environmental impact. The goal is to decrease the overall consumption of resources, reduce waste, and minimize the environmental impact of the construction and real estate sectors. This can be achieved by using new technologies and innovative solutions, such as 3D printing, prefabrication, building information modeling (BIM), and sustainable design principles.

### **6. Developing environmentally friendly services and products**

Developing environmentally friendly services and products means creating offerings that are designed to have a minimal impact on the environment. This can include products and services that are made from sustainable materials, use renewable energy sources, or are designed to reduce waste and pollution. The goal is to provide customers with products and services that have a lower environmental impact than traditional alternatives and to promote sustainable practices. This can be achieved by using new technologies and innovative solutions, such as renewable energy systems, sustainable building materials, and green transportation options.

## 7. Innovative solutions for life and working quality in buildings

There are several innovative solutions that can improve the quality of life and work in buildings. Some examples include:

- a. **Smart building systems:** These use sensors, automation, and data analytics to optimize building performance, improve energy efficiency, and enhance the overall comfort and convenience of building occupants.
- b. **Wellness and biophilic design:** This approach incorporates nature and natural light elements into the building design to promote well-being and reduce stress.
- c. **Flexible and modular spaces:** This allows spaces to be reconfigured easily to accommodate different needs and uses.
- d. **Building Information Modeling (BIM):** This is a digital representation of the physical and functional characteristics of a building, used to improve communication and collaboration among stakeholders, and also to inform decision-making.
- e. **Building Automation Systems (BAS):** These systems automate the functions of heating, ventilation, air conditioning, lighting, and other systems in a building, helping to improve energy efficiency and occupant comfort.
- f. **Green roofs and walls:** These are roofs and walls covered with vegetation that help to reduce energy consumption, improve air quality, and manage stormwater.
- g. **IoT (Internet of Things) enabled devices:** This includes devices that are connected to the internet and can be used to monitor and control different systems in a building, such as lighting, heating, and security.
- h. **Sustainable transportation options:** This includes options such as car-sharing, bike-sharing, and public transportation that can help reduce the environmental impact of travel to and from a building.
- i. **Energy Management Systems (EMS):** These systems monitor, control, and optimize the energy consumption of a building, helping to reduce costs and improve energy efficiency.

## 8. Development of new solutions to reduce the cost of properties for every user

Developing new solutions to reduce the cost of properties for every user in the real estate sector means creating new methods and technologies to decrease the overall cost of buying, owning, and maintaining a property. This can include things like using more efficient building techniques, implementing smart home technology, or offering shared living spaces. The goal is to make properties more affordable for a wider range of people, while also promoting sustainable and efficient practices. This can be achieved by using new technologies and innovative solutions such as:



- a. Prefabrication and modular construction can decrease the cost of building materials.
- b. Shared living spaces, which can allow multiple people to share living spaces and split the cost of rent and utilities.
- c. Affordable and sustainable housing initiatives, which can provide financial assistance and incentives for low-income families to purchase or rent affordable, energy-efficient homes.
- d. Government policies and regulations, can help to reduce the costs of buying and owning a property by providing tax breaks, subsidies, and other forms of financial assistance.

### **9. Creating transparency with machine learning and artificial intelligence in real estate and construction markets**

It means using advanced technologies to improve the accuracy, speed, and availability of data, making it easier for stakeholders to make informed decisions. This can include things like automating data collection and analysis, using predictive modeling to forecast market trends, and creating digital twins of buildings that can be used to visualize and evaluate performance. The goal is to provide stakeholders with the information they need to make informed decisions, while also reducing the risk of errors and increasing the efficiency of the real estate and construction markets. This can be achieved by using machine learning and artificial intelligence to:

- a. Analyse and predict market trends, such as property prices, demand, and rental rates, which can be used to inform investment decisions.
- b. Streamline and automate data collection and analysis, which can reduce the need for manual data entry and increase the accuracy of information.
- c. Create digital twins of buildings, which can be used to visualize and evaluate performance, such as energy consumption, and also to plan maintenance and upgrades.
- d. Improve property management by automating routine tasks and providing data-driven insights to inform decision-making.
- e. Enhance visualization and communication between stakeholders by providing 3D models and simulations, which can be used to plan, design, and construct buildings.
- f. Monitor the construction process, and provide real-time information on project progress, budget, and timelines.
- g. Provide transparency and security in property transactions by implementing blockchain-based solutions, which can increase trust and reduce intermediaries' cost and time.
- h. Create a more efficient and accurate process for evaluating properties.
- i. Use natural language processing (NLP) to analyze and extract insights from unstructured data sources, such as news articles, social media posts, and customer reviews.
- j. Improve customer service and communication by using chatbots and virtual assistants to provide customers with information and support.

## **10. Improving the quality and flexibility**

means creating new methods and technologies to enhance the overall performance, durability, and adaptability of buildings and real estate developments. This can include things like using advanced building materials and techniques, implementing smart building systems, and creating flexible and modular spaces. The goal is to provide customers with high-quality and long-lasting properties that can be easily adapted to changing needs and uses. This can be achieved by using new technologies and innovative solutions.

## **11. Increase in capacities**

means creating new ways of doing business that can help to improve efficiency, reduce costs, and increase the overall capabilities of the construction and real estate sectors. This can include things like implementing new technologies, streamlining processes, and creating new forms of financing. The goal is to help the sectors to be more productive and adaptable to the changing market conditions, and to improve the overall customer experience. This can be achieved by using innovative business models such as:

- a. **Implementing new technologies:** Adopting new technologies such as Building Information Modeling (BIM), 3D printing, and prefabrication can increase the speed and efficiency of the construction process, reducing costs and time.
- b. **Streamlining processes:** Using automation, artificial intelligence, and data analytics to improve decision-making and reduce the need for manual labour can increase the productivity of the construction and real estate sectors.
- c. **Creating new forms of financing:** Crowdfunding, peer-to-peer lending, and other forms of alternative financing can provide new sources of funding for construction and real estate projects, helping to increase capacity.
- d. **Adopting the sharing economy business models:** Co-living, co-working spaces, and other forms of shared property usage can increase the utilization of existing properties and reduce the vacancy rate.
- e. **Developing new revenue streams:** Offering property management services and providing data-driven insights for real estate professionals can increase the profitability of the construction and real estate sectors.
- f. **Implementing smart building systems and IoT-enabled devices:** This can increase the capabilities of buildings and real estate developments by improving energy efficiency, and communication and providing better control.
- g. **Creating Public-private partnerships:** This can leverage the expertise and resources of both the public and private sectors to increase the capacity of the construction and real estate sectors.

- h. **Adopting the circular economy business models:** this can increase efficiency and reduce the waste of resources during the construction and real estate development process.
- i. **Implementing blockchain technology:** this can increase the transparency, security, and trust among stakeholders in real estate transactions.
- j. **Creating new financing models such as green bonds and social impact investing:** this can provide funding for sustainable and socially responsible construction and real estate projects.

## 12. Reducing the consumption of resources and operating costs

There are several ways to reduce the consumption of resources and operating costs in the real estate and construction sectors:

- a. **Implementing energy-efficient building systems:** Installing energy-efficient HVAC systems, lighting, and appliances can significantly reduce energy consumption and operating costs.
- b. **Using sustainable building materials:** Using sustainable materials such as reclaimed wood, bamboo, and low-VOC paints can help to reduce the environmental impact of construction and lower operating costs.
- c. **Implementing green building practices:** Incorporating green building practices such as green roofs and walls, and rainwater harvesting can reduce energy consumption and lower operating costs.
- d. **Adopting the circular economy business models:** this can increase efficiency and reduce the waste of resources during the construction and real estate development process.
- e. **Implementing smart building systems and IoT-enabled devices:** This can monitor, control, and optimize the energy consumption of a building, helping to reduce operating costs.
- f. **Implementing Energy Management Systems (EMS):** This can monitor, control, and optimize the energy consumption of a building, helping to reduce costs and improve energy efficiency.
- g. **Creating Public-private partnerships:** This can leverage the expertise and resources of both the public and private sectors to reduce the consumption of resources and operating costs.

### **13. Qualified personnel and managers**

An innovative business model typically requires qualified personnel and managers who are able to understand and execute the new model effectively. These individuals should have the necessary skills, knowledge, and experience to drive the innovation forward and make it successful.

For instance, if the business model involves the implementation of new technology, the company will need personnel with expertise in that technology. Additionally, managers with experience in innovation management and a good understanding of the industry and market trends will be essential in developing and implementing the new business model.

Having a team that can think creatively and strategically, and identify new opportunities and potential challenges will be key for the success of the innovation. They will also be responsible for identifying and managing any risks associated with the new business model, and for ensuring that the company has the resources and infrastructure in place to support it.

In addition, it is also important to have a culture that encourages and supports innovation and change. This can be achieved by creating an environment where employees feel empowered to share their ideas, and where they are given the resources and support needed to bring those ideas to fruition.

## **5. Service & Products**

### **Product development process;**

**1. Focus is on developing entirely new products:** This is often referred to as “new-to-world products,” as such innovations perform an entirely new function and/or sometimes even create new markets. While these types of innovations are comparatively rare and pose the highest risks, the downside is that they often incur the highest cost ratio to develop.

**2. Another scope of innovations is on improved performance products:** The scope of these innovations is that of improving the performance of an existing function. This type of innovation is more common than the “new-to-the-world” type and is sometimes the key objective of R&D research activity. The scope of improved performance encompasses a wide range of various types of innovation. On one hand, the scope may involve the development and use of brand-new technology. On the other, it may lead to an extension or improvement of the technology currently used by improved design or better materials.

**3. Scope of new application products:** A considerable amount of innovative activity involves developing new applications for existing products. The amount of development activity required can vary enormously. In some cases, the high-tech product can be applied in a new context with little or no further development.

**4. Additional functions products:** This type of innovation may be used to improve performance or extend functions of existing products.

**5. Restyled products:** Often, “new products” are no more than an update or change in styling to old ones. It is a progressive innovation that generally involves lower costs and risks than “new-to-the-world” types of innovation. However, such low-cost, low-risk modifications sometimes turn into major investments carrying high risk which may not have been the original intention.

- a. **Humanity:** This refers to the idea of designing and developing PropTech solutions that prioritize the needs and well-being of people, rather than just focusing on technology for technology's sake.
- b. **Sustainability:** This concept relates to PropTech solutions that are environmentally friendly and promote sustainable living.
- c. **Maturity:** This refers to the level of development and readiness of a PropTech solution, in terms of its technical capabilities, scalability, and market acceptance.
- d. **Brand:** PropTech companies need to have a strong and recognizable brand to be successful in the market.
- e. **Reliability:** This refers to the dependability of PropTech solutions, in terms of their ability to perform as expected and deliver consistent results.
- f. **Versatility:** This refers to PropTech solutions that can be applied in multiple settings or industries.
- g. **Capacity:** This refers to the ability of PropTech solutions to handle large amounts of data or traffic.
- h. **Power:** This refers to the ability of PropTech solutions to handle complex calculations and perform heavy-duty tasks.
- i. **Durability:** This refers to the longevity and robustness of PropTech solutions, in terms of their ability to withstand wear and tear and remain functional over time.

- j. **Site performance:** This refers to the ability of PropTech solutions to improve the performance and efficiency of a specific property or real estate development.
- k. **Network readiness:** This refers to the ability of PropTech solutions to connect and work seamlessly with other systems and technologies.
- l. **Enhancing the digital transformation in the industry:** This refers to the use of PropTech to drive digital transformation in the real estate and construction industries.
- m. **Using digital tools to address the needs of the sectors:** This refers to the use of PropTech to solve specific problems or meet the unique needs of different sectors within the real estate and construction industries.
- n. **Creation of transparency through machine learning and artificial intelligence:** This refers to the use of PropTech, such as machine learning and AI, to create transparency and improve decision-making in the real estate and construction industries.
- o. **Developing the artificial intelligence-based database for market, property, and location analysis:** This refers to the use of AI and big data to analyze and understand real estate market trends, property values, and location-specific factors.
- p. **Blockchain-based solutions for development, trading, and, the utility of buildings:** This refers to the use of blockchain technology to improve transparency and efficiency in real estate development, trading, and building management.
- q. **Wearable technologies:** This refers to the use of PropTech, such as wearable devices, to improve the convenience and functionality of real estate and construction.

## 6. Innovation Levels

**Level 1:** There is only a preliminary idea for evaluating a company or a product (or a service). The market is not identified. The solution to the problem is bad and needs to be confirmed. It is the lowest level of innovation.

Innovation Level 1 is the earliest stage of the innovation process, where there is only a basic concept or idea for evaluating a company, product, or service. At this stage, the market and potential customers have not been identified, and the solution to the problem is not fully developed or validated. This is considered the lowest level of innovation as the idea is still in its infancy and needs further research and development before it can be implemented.

**Level 2:** There is a technical idea, a concept, a product, or a service that is to be advertised in a market that has not yet been identified.

Innovation Level 2 is the next stage of the innovation process, where there is a more developed technical idea, concept, product, or service that is ready to be advertised. However, the market and potential customers have not yet been identified. This means that the team has a product or service that they think is valuable but it hasn't been validated with the target customers yet. This level of innovation requires further market research and validation to ensure that there is a viable market for the product or service before it can be fully developed and launched.

**Level 3:** There is an identified market, but no complete or correct solution to meet this demand.

Innovation Level 3 is the next stage of the innovation process, where a market has been identified, but there is no complete or correct solution to meet the demand in that market. At this stage, the team has a clear understanding of the target customers and their needs, but they haven't found the best solution to meet those needs yet. This level of innovation requires further research and development to identify and create a complete and correct solution that addresses the identified market demand. Once a solution is identified and validated, it can be fully developed and launched.

**Level 4:** There is a product/service and an identified market for it.

Innovation Level 4 is the next stage of the innovation process, where a product or service has been developed and an identified market for it has been found. At this stage, the team has a clear understanding of the target customers and their needs, and has developed a solution that addresses those needs. The product or service has been validated in the market and is ready for full-scale development and launch. This level of innovation is considered more mature as the product or service has been validated and is ready for commercialization.

**Level 5:** There is a highly developed product/service and an identified market for it.

Innovation Level 5 is the final stage of the innovation process, where a highly developed product or service has been created and an identified market for it has been found. At this stage, the product or service has undergone significant development and testing to ensure that it is fully functional and meets the needs of the target market. It has been successfully launched in the market and is ready for ongoing commercialization. This level of innovation is considered fully mature as the product or service has been extensively developed, validated and is fully operational in the market.

**Level 6:** There is a sophisticated product/service and a huge identified market for it.

Innovation Level 6 builds on level 5, where the product/service has not only been fully developed and validated but also has a large and established market. This level of innovation indicates that the product or service has achieved a level of success in the market and has a significant customer base. It could also mean that the product or service is highly advanced and sophisticated, and is able to address a wide range of customer needs and preferences. Additionally, the market for this product or service is large, with a lot of demand and potential for growth. This level of innovation is considered highly successful and established.

**Level 7:** There is a disruptive product/service, which built a new market or changes the existing market. It's the highest level of innovation.

Innovation Level 7 is the highest level of innovation, where a product or service has not only a fully developed, validated, and established market but also has the ability to create a new market or disrupt the existing one. This means that the product or service is so unique, advanced, or game-changing that it alters the way people think about or use the product or service, creating a new category of demand or transforming the existing market. This level of innovation is considered highly disruptive and revolutionary, it has the potential to change the industry, create new business models and opportunities, and have a significant impact on society.

## 7. The basic question of business idea/business model

### 1. Do you have the possible maximum benefit?

An innovative business idea or business model can bring a number of benefits to a company, such as:

- a. Competitive advantage: An innovative business idea or business model can give a company a unique edge over its competitors, making it difficult for them to imitate.
- b. Increased market share: An innovative business idea or business model can help a company to attract new customers and increase its market share.
- c. Higher revenues: An innovative business idea or business model can help a company to generate higher revenues by offering new products or services or by finding new ways to monetize existing products or services.
- d. Attracting new investors: An innovative business idea or business model can be more attractive to investors, making it easier to raise capital.
- e. Greater flexibility: An innovative business idea or business model can provide a company with greater flexibility to adapt to changes in the market or to new opportunities.
- f. Brand recognition: An innovative business idea or business model can help a company to create a strong brand and increase brand recognition.
- g. Greater efficiency: An innovative business idea or business model can help a company to operate more efficiently, reducing costs and increasing profits.



- h. Employee motivation: An innovative business idea or business model can also help to motivate employees and increase their engagement by providing them with new and challenging opportunities.

## **2. Is the implementation of the business idea feasible?**

Feasibility of implementation refers to the practicality and likelihood of successfully executing a business idea. It considers factors such as the availability of resources, market demand, competition, and the overall potential profitability of the venture. It also includes an assessment of the potential risks and challenges that may be encountered during the implementation process. In other words, it is an evaluation of whether the idea is practical, realistic, and can be successfully implemented within the resources and constraints available.

## **3. Do they have added value for customers?**

Determining whether a business idea has added value for customers is an important step in assessing the feasibility of the idea. It requires understanding the needs and wants of the target market and determining how the product or service offered by the business will meet or exceed those needs. Some of the key indicators of added value for customers include:

- a. Improved quality or performance of a product or service
- b. Increased convenience or accessibility
- c. Lower prices or better value for money
- d. Unique or innovative features not offered by competitors
- e. Positive social or environmental impact

It is important to note that different customers may value different things, so it is important to understand the specific needs of the target market when determining whether a business idea has added value for customers.

## **4. Is there a unique position compared to the competition?**

The concept of having a unique position in the market compared to competitors is an important factor for any business. Companies must strive to differentiate themselves from their competition, and this can be achieved through various means such as product innovation, pricing strategies or customer service initiatives. Having a unique position in the market will help businesses stand out from their competitors and attract more customers. This can also lead to increased profits due to higher demand for products or services that are not offered by other companies within the same sector.

Achieving a unique position in the market requires careful planning and research into what makes your company different than its rivals. It's important for businesses to identify where they have an edge over others so that they can capitalize on it effectively and make sure it stands out among all other offerings available in the marketplace today. Additionally, companies should focus on creating value-added features which are not found elsewhere –

these could include better customer service options, faster delivery times, or even specialized product ranges tailored toward specific niches of consumers who may otherwise go unserved by larger players within their industry segmentation space.

Having a competitive advantage over other firms is essential if you want your business venture to succeed long term; however there's no one size fits all approach when it comes down to establishing yourself as being uniquely positioned against rival operations across multiple sectors - each situation needs careful consideration given both internal resources at hand along with external factors like consumer trends & preferences before making any final decisions regarding positioning strategy implementation plans going forward!

### **5. Do they have earning potential?**

The emergence of the new business model is an exciting development for many entrepreneurs. The potential to earn more money and increase profits is a major draw for those looking to start or expand their current businesses. However, it's important to understand that there are no guarantees when it comes to earning potential with this new model. It all depends on how well the business can be managed and if they have access to enough resources and capital in order to make its venture successful.

In order for a business using this new model to be successful, they need strong management skills as well as sufficient financial resources in place before launching operations. This means having a clear understanding of what needs to do each step of the way from marketing strategies through customer service initiatives so that customers are kept satisfied with products or services offered by the company at all times. Additionally, making sure there's enough capital available so expenses don't exceed income will also help ensure profitability over time.

Overall, while adopting this new business model does offer an opportunity for increased earnings, success won't happen overnight without proper planning and execution. With careful consideration given towards managing finances wisely along with sound decision-making based upon reliable data analysis, businesses may find themselves reaping greater rewards than ever before thanks in part due to its unique structure which allows them more flexibility compared to traditional models used today.

### **6. Do they have the necessary skills and technologies?**

For a disruptive business model, service, or product to be successful, the company behind it must have the necessary skills and technologies to develop and deliver the product or service. This includes the ability to research and understand customer needs and pain points, the ability to develop and test new products, services, or technologies, and the ability to scale and deliver the product or service to customers.

In terms of skills, a successful disruptive business model should have a team with a mix of skills, including product development, marketing, sales, and operations. They should also have a deep understanding of the industry they are operating in and the customer's needs.

In terms of technologies, a disruptive business model should have access to the necessary tools and technologies to develop and deliver the product or service. For example, a ride-hailing service like Uber requires technologies such as GPS, mapping, and mobile payments. A streaming service like Netflix requires technologies such as video encoding, streaming, and content delivery networks. An e-commerce platform like Amazon requires technologies such as inventory management, payment processing, and logistics.

In summary, a disruptive business model should have both the skills and the technologies to create and deliver a product or service that addresses customer needs in a new and innovative way.

#### **7. Are the services and products permitted by local law and conform to the standards?**

It depends on the specific services and products in question and the laws and standards of the local jurisdiction. In order for a service or product to be considered legal and compliant, it must meet all relevant regulations and standards in the area where it is being offered or sold. This can include laws related to safety, consumer protection, environmental impact, and more. It is the responsibility of the company or individual offering the service or product to ensure that it meets all applicable laws and standards before introducing it to the market.

#### **8. Does the team have enough know-how and experience regarding business models?**

It depends on the specific team and business models in question. Business models can vary greatly and require different levels of knowledge and experience to execute successfully. A team that has experience and knowledge in a particular business model will likely be better equipped to navigate the challenges and opportunities associated with that model. However, a team that lacks experience in a particular business model can still succeed if they are willing to learn, adapt and seek guidance from experts.

It's also worth noting that having a diverse team with different skills and experiences can be beneficial for a company as it can bring different perspectives and insights to the table, which can help to identify new opportunities and find innovative solutions to problems.

#### **9. Is the idea novel?**

A novel business idea refers to a new or original concept for a product, service, or business model that has not been seen before. It is a creative and unique idea that solves a problem, fulfills a need or addresses a gap in the market that hasn't been done before. It is something new and different that sets it apart from existing products or services.

For a business idea to be considered novel, it should be something that hasn't been done before or at least not in the same way. It should be something that has the potential to change the market, create new opportunities, or change the way things are done. A novel business idea can be the result of a combination of different technologies, processes, or

industries, and it should have the potential to disrupt an existing market, create a new one, or fill a market gap.

In summary, a novel business idea is a new, creative, and unique idea that addresses a market gap or unmet need in a way that sets it apart from existing products or services.

### **10. Has the idea been worked out completely and in detail?**

A new business idea may have been worked out to varying degrees of completeness and detail, depending on the stage of development it is in. At the early stage, a new business idea may be little more than a concept, with only a general idea of what the product or service will be and how it will work. As the idea develops, more and more details are fleshed out, such as the target market, pricing, and distribution strategy, and technology needs.

For a business idea to be considered fully worked out and ready to be implemented, it should have a clear and well-defined concept, a solid business plan, a thorough understanding of the target market, a competitive analysis, and a detailed financial plan. Additionally, a fully worked-out business idea should have a team or individuals with the necessary skills and resources to execute the plan.

It's important to note that even the best-worked-out business ideas can still face unexpected challenges and obstacles, and it's important to be flexible and adapt to changing market conditions.

In summary, a new business idea can be worked out to varying degrees of completeness and detail. A fully worked-out business idea should have a clear and well-defined concept, a solid business plan, a thorough understanding of the target market, a competitive analysis, and a detailed financial plan. Additionally, a fully worked-out business idea should have a team or individuals with the necessary skills and resources to execute the plan.

### **11. Is your product or service improvements in a way that the market values?**

For a new product or service to be successful, it should be an improvement in a way that the market values. This means that it should address a need or pain point that customers have and that it should be able to provide a better solution than existing products or services in the market. It's essential that the new product or service is perceived as valuable by the target market, and that it offers something that the existing products or services don't.

The market value of a new product or service can be determined by conducting market research, which involves understanding the target market, analysing the competition, and gathering feedback from potential customers. This research can help identify what features, benefits, and value propositions the customers are looking for, and how the new product or service can meet those needs.

It's important to note that market values can change over time, and it's important for businesses to stay abreast of these changes and adapt accordingly.

In summary, for a new product or service to be successful, it should be an improvement in a way that the market values. This means that it should address a need or pain point that customers have and that it should be able to provide a better solution than existing products or services in the market. It's essential that the new product or service is perceived as valuable by the target market, and that it offers something that the existing products or services don't.

The introduction of a new product or service can be an exciting development for any company. It allows them to expand their offerings, increase customer satisfaction and create more opportunities for growth. However, it is important to consider how the market values these improvements before investing in them. This essay will discuss the importance of understanding how the market values new products or services and offer some strategies that companies can use to ensure they are making improvements in ways that are meaningful to customers.

First, when introducing a new product or service it is essential for companies to understand what features would be most valuable from their customers' perspective. Conducting surveys and focus groups with potential users can provide invaluable insight into what consumers expect from this offering as well as which features should take priority during its design process. Additionally, researching competitors' offerings provides further context on where there may be gaps in current solutions within the industry which could give your own solution an edge over others available on the market today.

Second, once you have identified areas where your offering has potential advantages over existing options, it's important you find ways to communicate those benefits effectively. Developing marketing materials such as brochures, website content, advertisements etc., that clearly explain why this particular product/service offers superior value compared with similar ones available elsewhere will help convince prospective buyers of its worthiness. Furthermore, engaging influencers who already have established relationships with target audiences through social media platforms like Instagram & YouTube could also prove beneficial if done correctly (e.g., by providing free samples/discounts) since they often serve as trusted sources of information amongst followers who follow them closely online.

Finally, while having better quality than competitors alone won't guarantee success - pricing plays an equally vital role too so make sure yours isn't too high otherwise people won't buy! Companies needn't necessarily compete solely based on price either; instead explore other creative methods such as creating loyalty programs & bundles whereby customers receive additional incentives when buying multiple items at once thus increasing overall sales volume whilst still maintaining profitability margins per unit sold (e.g., Amazon Prime).

In conclusion, understanding how different markets value various aspects related to a particular good/service is key when launching something completely new onto said marketplace; however proper research must first be conducted prior so one knows exactly what needs improving upon then finding effective channels through which those benefits

get communicated outwards afterward ensuring maximum return investment made into developing said item(s) itself!

## **12. Creating a whole new market with the introduction of a whole new type of product or service?**

Creating a whole new market with the introduction of a whole new type of product or service is a type of disruptive innovation. Disruptive innovation can create a new market by introducing a new product or service that addresses a previously unmet need or customer pain point in a way that existing products or services cannot. This is often achieved by introducing new features, technologies, or services that make the product or service more efficient, convenient, or enjoyable for customers.

A company that creates a whole new market with the introduction of a whole new type of product or service is able to create new opportunities for businesses and entrepreneurs, and can also serve a wider range of customers, including those who have been underserved or ignored by existing products or services.

In summary, creating a whole new market with the introduction of a whole new type of product or service is a type of disruptive innovation, it is a new, creative, and unique idea that addresses a market gap or unmet need in a way that sets it apart from existing products or services and opens new opportunities for businesses and entrepreneurs.

Creating a whole new market with the introduction of a whole new type of product or service is an exciting opportunity for any business. Not only does it provide the potential to increase revenue and expand into untapped markets, but it also allows companies to gain competitive advantages over their competitors by providing something that no one else has. A successful launch requires careful planning and execution in order to ensure success.

The first step in creating a whole new market is identifying an unmet need or gap in the current marketplace that can be filled with your product or service offering. This could involve conducting extensive research on customer needs, trends, competition analysis, etc., so you have as much information as possible when developing your strategy. Once you've identified this gap and developed your concept accordingly, you should create comprehensive marketing plans detailing how best to position yourself within the existing landscape while still distinguishing yourself from other players in order to stand out from them effectively without alienating potential customers who may already be familiar with similar offerings elsewhere.

Finally, once everything has been put together properly it's time for implementation; advertising campaigns must be launched across multiple channels such as print media (newspapers/magazines), television commercials, etc., along with digital strategies like social media campaigns which will help spread awareness about what makes this particular offering unique compared to others available on the market today. Additionally establishing relationships between distributors, retailers, suppliers & industry influencers will help build brand recognition & trust amongst target audiences which are essential

components for any company looking at introducing something completely fresh into their respective industries.

### **13. Are the products or services based on new technologies?**

Products and services based on new technologies can have a significant impact on various industries and society as a whole. Some of the key benefits include:

- a. **Increased efficiency and productivity:** New technologies can automate certain tasks or make processes more streamlined, which can lead to cost savings and increased productivity.
- b. **Improved customer experiences:** new technologies can be used to create more personalized and interactive experiences for customers, which can lead to increased customer satisfaction and loyalty.
- c. **Disruption of existing industries:** new technologies can create new markets and disrupt existing ones, leading to the creation of new business models and opportunities for growth.
- d. **Economic growth:** The development and adoption of new technologies can drive economic growth by creating new jobs and industries.
- e. **Innovation and progress:** new technologies can lead to new discoveries and advancements in various fields, which can have a positive impact on society and the world as a whole.

However, it's also important to consider the potential downsides of new technologies, such as job displacement, privacy concerns, and ethical issues.

In today's digital age, businesses must stay ahead of the competition and offer customers something different to remain competitive. This means developing products and services that are built upon emerging technologies such as artificial intelligence (AI) and machine learning (ML). Additionally, companies need to create innovative business models which enable them to monetize these offerings in a way that is beneficial for both their customers and themselves.

One example of this type of product or service would be a smart home device with AI capabilities. Smart home devices can use AI algorithms to learn user preferences over time, making it easier for users to control their homes from anywhere using voice commands or mobile apps. Furthermore, businesses have developed unique subscription-based pricing models so they can make money off these devices while still offering consumers reasonable prices on high-quality technology solutions.

In conclusion, there are numerous examples where companies have leveraged cutting-edge technology along with creative business models to develop exciting products and services

that meet customer needs better than ever before. As long as businesses continue innovating around emerging tech trends like AI/ML while creating sustainable revenue streams through inventive pricing strategies; they will be able to keep up with consumer demand now --and into the future--as well as maintain a competitive advantage over other firms operating within their industry verticals.

#### **14. Does your innovation generate added value?**

Innovation can generate added value in various ways. Some examples include:

- a. **Improved product or service features:** Innovation can lead to new or improved products or services that offer more value to customers, such as increased functionality or better performance.
- b. **Lower costs:** Innovation can lead to more efficient processes and technologies that can reduce costs, making products or services more affordable.
- c. **New business models:** Innovation can lead to new ways of delivering products or services, such as subscription-based models or on-demand services, which can create new revenue streams and added value for customers.
- d. **Increased competitiveness:** Innovation can give companies a competitive edge by allowing them to differentiate their products or services from those of their competitors.
- e. **Improved customer experiences:** Innovation can lead to more personalized and engaging customer experiences, which can increase customer satisfaction and loyalty.

However, not all innovation generates added value, sometimes it can just be a way to improve the current products or services. It's important to evaluate the innovation, test it and see if it truly generates added value for the customer or society.

Innovation is an important factor in the success of any business. It can create products and services that add value to customers, increase profits for companies, and drive economic growth. But does innovation always generate added value? To answer this question, it's important to look at how innovations are developed and implemented.

When a company develops an innovative product or service, it must consider if it will provide additional benefits over existing offerings in the marketplace. If so, then there is potential for increased sales revenue due to higher demand from consumers who find these new features attractive or useful enough to pay more than what other competitors offer them. Additionally, cost savings may be realized through improved efficiency of production processes associated with the innovation as well as reduced marketing costs since fewer resources would be needed when introducing something that already has a built-in customer base due to its uniqueness relative to other options available on the market today.



Ultimately though whether or not an innovation generates added value depends on its overall impact within a given industry sector – if it fails to deliver tangible benefits compared with existing solutions then chances are likely very slim that any real return will result from such efforts no matter how creative they might have been initially conceived by their creators/developers behind closed doors prior launch time! As such companies should carefully weigh all pros & cons before investing heavily into creating something revolutionary only later discover nobody wants to buy/use what was just created after lots of money spent invested along the way during the process.

### **15. Are the customers ready to pay a price?**

Whether customers are willing to pay the price for innovative products or services can vary depending on a number of factors, such as the specific product or service, the target market, and the stage of market development.

In the early stages of market development, customers may be less likely to pay a premium for an innovative product or service as they may be uncertain about its value and the technology is not yet widely adopted.

In mature markets, customers may be more willing to pay a premium for an innovative product or service that offers significant improvements over existing solutions.

Some customers are willing to pay a premium for innovative products or services that align with their values, such as sustainability or health and wellness.

In some cases, customers may be willing to pay a premium for a product or service that is considered a luxury or status symbol.

Innovation in price models can also help companies to attract customers, such as pay-as-you-go, subscription-based models, or free trials.

Ultimately, whether customers are willing to pay the price for an innovative product or service will depend on a variety of factors, including the perceived value of the product or service, the pricing strategy, and the target market. It's important for companies to conduct market research and testing to understand their target customers and what they are willing to pay for.

**The following points must be answered with “applicable”, “partially applicable”, “not applicable”:**

1. Replacing products that are discontinued: Evaluate the potential market demand for the new product and its ability to effectively replace the discontinued product.
2. Enlarging the area of application: Evaluate the potential new markets or industries in which the PropTech solution could be applied.
3. Increase the market share: Evaluate the PropTech solution's ability to compete with existing solutions and gain market share.
4. Entry into new markets: Evaluate the potential opportunities and barriers to entering new markets.
5. Improving the response time to customer needs: Evaluate the PropTech solution's ability to quickly and effectively respond to customer needs and feedback.
6. Improve the awareness or the presentation of the products: Evaluate the PropTech solution's ability to effectively market and promote itself to potential customers.
7. Developing environmentally friendly products: Evaluate the PropTech solution's ability to reduce its environmental impact and promote sustainable living.
8. Improve the quality: Evaluate the PropTech solution's ability to improve performance, functionality, and overall quality compared to existing solutions.
9. Improve flexibility: Evaluate the PropTech solution's ability to adapt to changing needs and requirements.
10. Increase in capacities: Evaluate the PropTech solution's ability to handle larger amounts of data or traffic.
11. Reduce employee costs: Evaluate the PropTech solution's ability to automate tasks and reduce the need for human labour.
12. Reducing resource consumption: Evaluate the PropTech solution's ability to reduce energy and resource consumption.
13. Reduce design costs: Evaluate the PropTech solution's ability to reduce the costs of designing and developing new products.
14. Reducing set-up times: Evaluate the PropTech solution's ability to reduce the time required to set up and implement new solutions.
15. Reduce operating costs: Evaluate the PropTech solution's ability to reduce the costs of operating and maintaining the system.
16. Catching up on industry standards: Evaluate the PropTech solution's ability to meet or exceed industry standards and regulations.
17. Increase delivery efficiency and times: Evaluate the PropTech solution's ability to increase the efficiency and speed of delivering products and services.
18. Improve information technology usage: Evaluate the PropTech solution's ability to improve the use of information technology within the company.

19. Improve communication and collaboration in the company: Evaluate the PropTech solution's ability to improve communication and collaboration among employees and teams.
20. Increase the exchange of knowledge and experience with other organizations: Evaluate the PropTech solution's ability to share knowledge and experience with other organizations in the industry.
21. Develop stronger customer relationships: Evaluate the PropTech solution's ability to improve customer relationships and engagement.
22. Improving working conditions: Evaluate the PropTech solution's ability to improve working conditions for employees.
23. Reduce the impact on health and the environment: Evaluate the PropTech solution's ability to reduce its impact on health and the environment.
24. Increase security: Evaluate the PropTech solution's ability to improve security for customers and employees.
25. Compliance with regulatory requirements: Evaluate the PropTech solution's ability to comply with relevant industry standards and regulations.

## 8. Factors

### **The following six factors need to be designed into all systems and/or processes;**

1. Ways to determine what the customer wants and needs: This refers to the ability to gather customer feedback and understand customer needs, in order to develop PropTech solutions that meet those needs.
2. Ways to identify improvement opportunities: This refers to the ability to identify and evaluate potential areas for improvement in PropTech solutions, in order to continuously improve performance and functionality.
3. Ways to prevent errors from occurring: This refers to the ability to design systems and processes that minimize the risk of errors, such as by implementing quality control measures.
4. Ways to segregate good items from bad items: This refers to the ability to separate PropTech solutions or products that meet quality standards from those that do not, in order to ensure that only high-quality products are delivered to customers.
5. Ways to correct bad items: This refers to the ability to identify and correct errors or defects in PropTech solutions, in order to ensure that they meet quality standards.

6. Ways to prevent errors from recurring: This refers to the ability to implement measures to prevent errors from recurring, such as by identifying and addressing the root causes of errors.

By designing these factors into all systems and processes, PropTech companies can ensure that their solutions meet customer needs, are of high quality, and are continuously improved.

## 9. The evaluation process

The evaluation process covers 13 main categories. Here are the categories and some criteria;

### 9.1 Uniqueness

The business models, services, and products must be unique and not easy to replicate. This statement means that a company's way of making money, the services it offers, and the products it sells should be distinct and not easily copied by competitors. In other words, the company should have a competitive advantage that makes it difficult for others to imitate its business model, services, and products. This can help the company to maintain a strong market position and protect its revenue streams.

#### 1. New product and not easy to copy

The product is unique and innovative, and it is difficult for competitors to replicate. This could mean that the product uses cutting-edge technology, has unique intellectual property, or has other characteristics that make it difficult to imitate. Having a product that is not easy to copy can give a company a competitive advantage and help it to maintain a strong market position.

#### 2. New service and not easy to copy

The service is unique and innovative, and it is difficult for competitors to replicate. This could mean that the service uses cutting-edge technology, has unique intellectual property, or has other characteristics that make it difficult to imitate. Having a service that is not easy to copy can give a company a competitive advantage and help it to maintain a strong market position. Additionally, this could mean that the service is based on a proprietary system, process, or knowledge that is difficult to replicate.

### **3. New business model and not easy to copy**

The way a company makes money is unique and innovative, and it is difficult for competitors to replicate. This could mean that the business model is based on a unique combination of products or services, uses cutting-edge technology or intellectual property, or has other characteristics that make it difficult to imitate. Having a business model that is not easy to copy can give a company a competitive advantage and help it to maintain a strong market position. Additionally, this could mean that the business model is based on a proprietary system, process, or knowledge that is difficult to replicate.

### **4. High recognition value**

Recognition value refers to the ability of a product, service, brand, or company to be easily recognized by consumers. It is the extent to which a customer can identify or remember the product, service, brand, or company. It is often associated with the brand name, logo, slogan, or other specific elements that make it easily recognizable. High recognition value can help to increase brand awareness, customer loyalty and customer retention, and make it easier for customers to find and purchase the product or service. It also helps in creating a strong image of the company.

### **5. The clear difference with the competition**

It means that the product, service, or business model offered by a company is distinct and stands out from that of its competitors. It implies that there is a clear and noticeable difference between the company's offering and that of its competitors. This could be in terms of quality, price, features, target market, or any other characteristic that sets the company's offering apart from the rest. Having a clear difference with the competition can help a company to attract and retain customers, as well as to differentiate itself from its competitors in the market. This can also be used to create a unique selling point for the company.

### **6. The product or service must have a standout attribute that the competition lacks**

The product or service offered by a company must have a unique feature or characteristic that sets it apart from its competitors. This standout attribute could be something that provides a significant benefit to customers, such as higher quality, lower price, or a unique feature that competitors do not offer. Having a standout attribute can help a company to attract and retain customers, as well as to differentiate itself from its competitors in the market.

## 9.2 Disruption

The new business model, service, or product must create a new market or replace an existing one. A disruptive business model, service, or product is one that fundamentally changes the way an industry operates by introducing a new way of doing things that is more efficient, cost-effective, or convenient for customers. This can often come from companies that are new to the industry, as they are not tied to traditional ways of doing things and are able to think outside the box. Disruptive innovations can also come from existing companies, but it is more difficult for them as they already have established processes and a customer base.

### 1. Creating a new market

A disruptive business model or product creates a new market when it introduces a new way of doing things that is so fundamentally different from the existing market that it creates a new demand for goods and services. For example, when Uber first launched, it created a new market for ride-hailing services by introducing a more convenient and cost-effective way for people to get around. Prior to Uber, there was no real market for this type of service, but once it became available, people began to use it and the demand for it grew. In this way, Uber created a new market for ride-hailing services, and disrupted the traditional taxi industry. Other examples of companies that have created new markets include Netflix, which created a market for streaming video content, and Airbnb, which created a market for short-term home rentals.

### 2. Potential to replace existing product or service

When a disruptive business model, service, or product has the potential to replace an existing product or service, it means that it has the ability to fundamentally change the way that customers interact with the industry and can make the existing products or services obsolete. This is because the new disruptive product or service is often faster, cheaper, more convenient, or simply better in some way than the existing products or services. This can happen because the disruptive innovation is able to address a previously unmet need or customer pain point, or because it is able to use new technology in a way that the existing products or services cannot.

### 3. Potential to change life and workstyles

A disruptive business model can have the potential to change lives and work styles. Disruptive innovations can fundamentally change the way we live and work by introducing new products, services, and technologies that make our lives more efficient, convenient,

and enjoyable. They can also create new opportunities for businesses, entrepreneurs, and employees. For example, the rise of e-commerce and the internet has changed the way we shop and has enabled many small businesses to sell their products online, which wouldn't have been possible before. Remote work, which is enabled by technologies such as video conferencing and cloud-based collaboration tools, has made it possible for people to work from anywhere and has changed the traditional 8-5 work schedule.

#### **4. Potential to change existing business models**

A disruptive business model can have the potential to change the existing business models. Disruptive innovations can fundamentally change the way that businesses operate by introducing new products, services, and technologies that make it possible to do things in a more efficient, cost-effective, or convenient way. This can make existing business models obsolete and force companies to adapt and innovate in order to stay competitive. For example, the rise of e-commerce has changed the way that brick-and-mortar retail operates, forcing many stores to close and forcing others to adapt by offering online sales and click-and-collect services.

#### **5. New solutions fill all market gaps and serve all participants**

A disruptive business model can have the potential to fill market gaps and serve all market participants. Disruptive innovations often emerge when a new product, service, or technology addresses a previously unmet need or customer pain point that existing products, services, or technologies cannot. By filling market gaps, disruptive business models can create new opportunities for businesses and entrepreneurs and can also serve a wider range of customers, including those who have been underserved or ignored by existing products, services, or technologies.

#### **6. Through quality raising offering new payable solutions**

When a disruptive business model or product raises the quality of the offering, it means that it improves the overall value of the product or service in some way, which in turn can create new opportunities for businesses and entrepreneurs. This is often achieved by introducing new features, technologies, or services that make the product or service more efficient, convenient, or enjoyable for customers. By raising the quality of the offering, disruptive innovation can create new and more profitable solutions, such as new pricing models, new revenue streams, or new ways of reaching customers.

## 9.3 Technology

New technological solutions must be developed and delivered in response to current needs and knowledge.

1. **Producing own devices and tools:** Developing and manufacturing in-house devices and tools to improve efficiency and reduce costs.
2. **New products based on scientific breakthroughs:** Creating new products and services based on the latest scientific research and technology advancements.
3. **Enhancing the digital transformation in the industry:** Adopting new technologies and digital solutions to improve processes and increase productivity in various industries.
4. **Changing Work-Flow Management:** Implementing new ways of managing workflows to improve efficiency and productivity.
5. **Changing Time Management:** Developing new tools and techniques for managing time, such as time-tracking and scheduling software.
6. **New technology must integrate with existing solutions:** new solutions must be designed to integrate seamlessly with existing systems and processes.
7. **New technology must be resilient against cyber-attacks:** new technology must be developed with security in mind to protect against cyber threats.
8. **Services and products must be transparent:** Services and products must be transparent in terms of their features, costs, and performance to ensure customers are well-informed.
9. **Creation of transparency through users:** Encourage user feedback and input to create transparency in the product development process.
10. **Network readiness:** The new technology must be designed to work seamlessly within the existing network infrastructure to ensure it can be easily adopted and integrated.



## 9.4 Human capital

Human capital is an essential driver of innovation and invention. Employees must be educated, experienced, and creative. Human capital is important for innovative business models for several reasons:

- a. **Innovation requires creativity and problem-solving skills:** Employees with the ability to think outside the box and come up with new ideas are essential for driving innovation in a business.
- b. **Human capital is a source of competitive advantage:** Companies that can attract and retain top talent are better positioned to innovate and stay ahead of the competition.
- c. **Innovation requires a diverse workforce:** A diverse workforce with different backgrounds and perspectives can bring different ideas and approaches to problem-solving, which can lead to more innovative solutions.
- d. **Innovation requires adaptability:** Employees who are willing to adapt and learn new skills are better equipped to adapt to the changes and disruptions brought by new technologies and business models.
- e. **Human capital is a key driver of economic growth:** A skilled and productive workforce is crucial for driving economic growth and creating new industries.
- f. **Innovation can be a driver of employee engagement and motivation:** When employees feel they are part of something new and exciting, they tend to be more engaged and motivated to contribute to the company.

In summary, Human capital is a critical component of innovation and new business models, as it is the people who come up with, develop and implement these new ideas and technologies. Investing in human capital can help companies build a culture of innovation, increase productivity and stay competitive.

### 1. 3 years' experience in the property technology sector

Having 3 years of experience in the property technology (PropTech) sector can be an asset for a team working on a PropTech related project. It indicates that the team members have had some exposure to the industry and have been able to gain a good understanding of the specific challenges and opportunities within the PropTech sector. They would have knowledge of the market trends, the technology available and the needs of the customers in the industry. It's worth noting that the PropTech sector is

relatively new, and it's considered to be evolving quickly, therefore, 3 years of experience may not be enough for some cases, it's always beneficial for the team to stay updated with the latest developments in the field and continuously look for ways to improve their skills.

## **2. 5 years of sector (real estate, construction and/or finance) experience**

Having 5 years of experience in the real estate, construction and/or finance sector can be a valuable asset for a team working on a PropTech project. This level of experience suggests that team members have a deep understanding of the real estate market, the construction process, and the financial aspects of property transactions. This understanding can help team members anticipate challenges, identify opportunities, and make better-informed decisions.

With 5 years of experience in these sectors, team members will have knowledge of the market trends, regulations, and laws that govern these industries, and the needs of the customers. They would have developed relationships with stakeholders within the industries such as real estate agents, builders, and banks. This experience can help team members to navigate the complexities of the PropTech industry and identify new opportunities for innovation.

It's worth noting that the PropTech industry is relatively new, and it's considered to be evolving quickly, therefore, it's always beneficial for the team to stay updated with the latest developments in the field and continuously look for ways to improve their skills.

## **3. Sectorial education**

Sectorial education for property technology employees is important for several reasons:

- a. **Keeping up with the latest technologies and trends:** The property technology sector is constantly evolving, with new technologies and trends emerging all the time. Sectorial education can help employees stay up-to-date with the latest developments and advancements in the field, which can be crucial for staying competitive.
- b. **Improving efficiency and productivity:** Education in property technology can help employees understand how to use new technologies and tools to improve the efficiency and productivity of their work.

- c. **Enhancing job performance:** Property technology professionals who are well-educated in the field are more likely to have the skills and knowledge needed to perform their jobs well.
- d. **Attracting and retaining top talent:** Companies that invest in the education of their employees are more likely to attract and retain top talent.
- e. **Fostering a culture of continuous learning:** Sectorial education can help foster a culture of continuous learning and professional development within the company, which can lead to a more motivated and engaged workforce.
- f. **Supporting the development of new business models:** Property technology is a key driver of new business models and processes, having professionals well-educated in this field can help companies to adapt and implement these new models more efficiently.

In summary, Sectorial education for property technology employees is important for staying competitive, improving efficiency and productivity, attracting and retaining top talent, fostering a culture of continuous learning and supporting the development of new business models.

#### 4. Market knowledge

Market knowledge for property technology employees is important for several reasons:

- a. **Understanding customer needs:** Market knowledge can help property technology employees understand the needs and preferences of their customers, which can be crucial for developing products and services that meet those needs.
- b. **Identifying new opportunities:** Understanding the market can help employees identify new opportunities for growth and expansion, such as new customer segments or untapped markets.
- c. **Developing effective marketing strategies:** Having market knowledge can help employees develop effective marketing strategies that resonate with target customers and drive sales.
- d. **Staying ahead of the competition:** Understanding the market and the competitive landscape can help employees stay ahead of the competition by identifying trends

and emerging technologies and adapting to them.

- e. **Making data-driven decisions:** Market knowledge can help employees make data-driven decisions by providing insights into customer behaviour and market trends.
- f. **Identifying and mitigating risks:** Understanding the market can help employees identify potential risks and challenges, such as changes in regulations or shifts in customer demand, and develop strategies to mitigate them.

In summary, market knowledge is important for property technology employees because it can help them understand customer needs, identify new opportunities, develop effective marketing strategies, stay ahead of the competition, make data-driven decisions, and mitigate risks. Having market knowledge can help companies to adapt to market changes and develop strategies to grow their business.

## 5. Research Skills

Research skills are important for property technology employees for several reasons:

- a. **Understanding new technologies and trends:** Research skills can help employees stay up-to-date on the latest technologies and trends in the property technology field, which can be crucial for staying competitive.
- b. **Identifying new opportunities:** Research skills can help employees identify new opportunities for growth and expansion, such as new customer segments or untapped markets.
- c. **Developing new products and services:** Research skills can be used to identify customer needs and preferences, which can be crucial for developing new products and services that meet those needs.
- d. **Solving problems and making data-driven decisions:** Research skills can help employees gather and analyse data to identify problems and find solutions, which can lead to more data-driven decision making.
- e. **Identifying and mitigating risks:** Research skills can help employees identify potential risks and challenges, such as changes in regulations or shifts in customer demand, and develop strategies to mitigate them.

- f. **Supporting the development of new business models:** Research skills can help employees understand the market, the technology and the customer needs to support the development of new business models.

In summary, research skills are important for property technology employees because they can help them stay up-to-date on the latest technologies and trends, identify new opportunities, develop new products and services, solve problems, make data-driven decisions, mitigate risks, and support the development of new business models. Research skills can be crucial for companies in the property technology field to stay competitive, innovative and adaptable.

## 6. Entrepreneurship Skills

Entrepreneurship skills are important for PropTech founders for several reasons:

- a. **Identifying market opportunities:** Entrepreneurship skills can help PropTech founders identify opportunities for innovation and growth in the property technology field.
- b. **Developing a business plan:** Entrepreneurship skills can help PropTech founders develop a clear and compelling business plan that outlines the problem they are solving, the solution they are offering, and the market they are targeting.
- c. **Raising capital:** Entrepreneurship skills can help PropTech founders raise capital from investors, partners and other stakeholders.
- d. **Building a team:** Entrepreneurship skills can help PropTech founders to build a team of skilled and motivated employees who can help bring their vision to life.
- e. **Adapting to market changes:** Entrepreneurship skills can help PropTech founders be adaptable and pivot their business strategies as necessary in response to market changes.
- f. **Managing risks:** Entrepreneurship skills can help PropTech founders identify and manage risks associated with starting and running a business.
- g. **Leadership:** Entrepreneurship skills can help PropTech founders to lead, motivate and inspire the team to achieve the company's goals and objectives.

In summary, Entrepreneurship skills are important for PropTech founders because they can help them identify market opportunities, develop a business plan, raise capital, build a team, adapt to market changes, manage risks and provide leadership. These skills are essential for PropTech founders to successfully start and grow their businesses in the property technology field.

## **7. Ability to develop service and product**

It is important for employees of a PropTech company to have the ability to develop services and products. The PropTech industry is highly competitive and constantly evolving, so it is essential for companies to be able to create new and innovative services and products in order to stay ahead of the competition.

Having employees who are able to develop services and products can also help a PropTech company to respond more quickly to changes in the market and customer needs. These employees will be familiar with the latest technologies, industry trends, and customer needs. They can use this knowledge to identify new opportunities and create solutions that meet the needs of customers.

It's also important to note that developing a service or product is a process that requires multiple skills, including research, design, development, testing and validation. Therefore, it's beneficial for a PropTech company to have a team with diverse backgrounds and skills that can work together to bring the product or service to market.

## **8. Ability to define technologies**

It is important for employees of a PropTech company to have the ability to define technologies. This means that they have the knowledge and skills to identify and evaluate new technologies that can be used to create innovative services and products, and to determine how those technologies can be integrated into the company's products and services.

Having employees who can define technologies can help a PropTech company to stay ahead of the competition by identifying new technologies that can be used to create new products and services before other companies do. It also allows the company to evaluate the costs and benefits of different technologies and select the most appropriate ones for their specific use case.

It's also important to note that defining technologies is a process that requires a

combination of skills including research, analysis, and critical thinking. It's beneficial for a PropTech company to have a team with diverse backgrounds and skills that can work together to define the technologies that will be used for their products or services. This could include individuals with backgrounds in engineering, computer science, information technology, and business.

## **9. Ability to define sustainability in sectors**

It is important for employees of a PropTech company to have the ability to define sustainability in the real estate and construction sectors. Sustainability is an increasingly important aspect of the PropTech industry, as it involves using technology to improve the environmental, social and economic performance of buildings and developments.

Having employees who can define sustainability in the real estate and construction sectors can help a PropTech company to identify new opportunities to create sustainable products and services, and to evaluate the environmental and social impact of their products and services. They can also help to identify and implement sustainable technologies and techniques in the company's products and services.

Defining sustainability in these sectors requires a combination of skills including research, analysis, critical thinking and understanding of the sustainability standards and regulations. It's beneficial for a PropTech company to have a team with diverse backgrounds and skills that can work together to define the sustainability aspects for their products or services. This could include individuals with backgrounds in engineering, environmental science, architecture, urban planning, and business.

## **10. Property technology knowledge**

It is important for employees of a PropTech company to have knowledge of property technology. Property technology, also known as PropTech, refers to the use of technology to improve the performance of the real estate industry, including areas such as property management, construction, and real estate finance. Having knowledge of property technology can help employees to understand the latest trends and innovations in the industry, and to identify new opportunities for the company.

Employees with knowledge of property technology can also help the company to evaluate and select the most appropriate technology solutions for their specific use cases. They can also assist in the implementation and integration of these technologies

into the company's products and services.

It's beneficial for a PropTech company to have a team with diverse backgrounds and skills that can work together to bring the product or service to market. This could include individuals with backgrounds in engineering, computer science, information technology, real estate, architecture, urban planning, and business. Having a combination of different skills and expertise in property technology will help the company to deliver innovative and effective solutions for the industry.

### **11. Fielding an experienced executive team**

It is important for a PropTech company to have an experienced executive team. An experienced executive team brings knowledge and understanding of the industry and its challenges, as well as the ability to make strategic decisions that will guide the company toward its goals. They also bring a wealth of experience in business management, financial management, marketing, and sales, which are crucial for the success of any company.

An experienced executive team can also provide guidance and mentorship to other members of the organization, helping them to develop their skills and knowledge. They can also help to build a strong culture within the company, which can promote teamwork, creativity, and innovation.

In the PropTech industry, having an executive team with experience in both the technology and real estate industry is crucial. They will be familiar with the latest technological trends, understand the needs of the customers, and will be able to navigate the complex landscape of the PropTech industry, which is constantly evolving. They will also be able to understand the regulations and laws that govern the industry and make informed decisions that are in line with the company's goals and objectives.

## **9.5 Market needs**

The services and products must meet market needs and close gaps, offering a wide range of applications.

1. **Identifying the target market:** Clearly identifying the target market and their needs is crucial to developing a product or service that will be successful in the market.



2. **Wide range of applications:** The product or service should have a wide range of applications to attract a broad customer base and increase its potential for success.
3. **Payable prices:** The price of the product or service should be competitive and affordable for the target market.
4. **Adaptability to changes in the market:** The product or service should be flexible and adaptable to changes in the market to ensure its continued success.
5. **Serve a critical market need:** The product or service should address a critical market need to ensure its relevance and demand in the market.
6. **Scalable business model to serve market needs:** The business model should be scalable to adapt and grow as the market changes and evolves.
7. **Creating a product or service that uniquely addresses a real market need:** The product or service should be unique and address a real market need to stand out in the market.
8. **Understanding the expectations:** Understanding the expectations and needs of the target market is crucial in developing a successful product or service.
9. **Identifying new market spaces:** Identifying new market spaces and opportunities for growth is crucial for the long-term success of the product or service.
10. **Identifying common sector needs and/or sub-sector needs:** Identifying common needs within a sector or sub-sector can lead to new opportunities for the product or service.

## 9.6 Solving problems

The business models, services, and products must address or resolve a specific problem. Using these categories and basic criteria, the companies are evaluated according to their business model, service, and product. Each category has its characteristic criteria:

1. Solving the right problem
2. knowing the problems

3. Address a specific problem
4. intend to solve a problem that a specific group of consumers encounters
5. Hidden problem: Your potential clients have a problem, but are not aware of it.
6. Passive problem: Customers have a problem, but they are not concerned with the solution.
7. Active problem: They have a problem and they have searched for a solution without success.
8. Urgent problem: The client has an urgent problem and is looking for a quick solution because the one he has does not work for him
9. Scalable solution: The solution must be able to handle increasing demand and grow as the business expands.
10. Innovative solution: The solution must be unique and provide a new way of addressing the problem.
11. Cost-effective solution: The solution must be affordable for the target market.
12. Sustainable solution: The solution must be environmentally and socially responsible.
13. Measurable results: The solution must be able to demonstrate measurable results for the customer.
14. Easy to use and understand: The solution must be user-friendly and easy to understand for the target market.
15. Accessible: The solution must be easily accessible to the target market.
16. Customizable: The solution must be customizable to meet the specific needs of different customers.
17. Support and maintenance: The solution must have a strong support and maintenance system in place.
18. Data and security: The solution must have strong data and security protocols to protect customer information.

## 9.7 Process optimization

The business models, services, and products must enhance lifestyles and working methods.

### 1. improvement in the use case

it is important for business models, services, and products to focus on improving the use case they are addressing. This can be achieved by understanding the needs and pain points of the target audience and continuously gathering feedback to make iterative improvements. Additionally, it is essential to stay up to date with industry trends and advancements in technology to ensure the offering remains relevant and competitive.

## **2. Reducing time and cost**

This can be achieved through various methods such as automation, streamlining processes, and utilizing cost-effective resources. By reducing time and cost, companies can increase efficiency and profitability, which can lead to improved customer satisfaction and increased market share. Additionally, by reducing time and cost, companies can also increase their ability to scale their operations.

## **3. Improving service and product**

Improving service and product is an important criterion for business models, services, and products. This can be achieved through various methods such as gathering customer feedback, conducting market research, and staying up to date with industry trends. By continuously improving service and products, companies can increase customer satisfaction and loyalty, which can lead to increased sales and revenue. Additionally, by improving service and products, companies can also increase their competitiveness and ability to attract new customers.

## **4. Eliminating redundancies**

This can be achieved by identifying and removing unnecessary steps, processes, or features that do not add value to the customer. By eliminating redundancies, companies can increase efficiency and reduce costs, which can lead to improved customer satisfaction and increased profitability. Additionally, by eliminating redundancies, companies can also increase their ability to scale their operations. It can also help in keeping the product or service user-friendly and easy to understand.

## **5. Streamlining workflows**

Streamlining workflow refers to the process of making work processes more efficient and effective. It involves identifying and removing bottlenecks, automating repetitive tasks, and standardizing processes. The goal of streamlining workflow is to reduce the time and resources required to complete tasks while increasing the quality and accuracy of the work. This can be achieved by analysing current workflows and identifying areas that can be improved, such as by eliminating unnecessary steps, creating more efficient processes, and utilizing technology to automate repetitive tasks. By streamlining workflows, companies can increase efficiency, reduce errors, and improve productivity, and increase the overall effectiveness of their operations.

## **6. Improving communication**

Effective communication is crucial in any business setting, whether it's between employees, with customers, or with other stakeholders. Improving communication can

be achieved by implementing clear communication protocols, providing training and resources, and utilizing technology to facilitate communication. By improving communication, companies can increase efficiency, reduce misunderstandings, and improve customer satisfaction. Additionally, by improving communication, companies can also increase their ability to make informed decisions, resolve issues more quickly and effectively, and work more effectively as a team.

## **7. Forecasting changes**

Forecasting changes is an important aspect for businesses to consider in their models, services, and products. It allows them to anticipate future market trends and make informed decisions about their operations. This can include forecasting changes in consumer demand, competition, technology, and other factors that may impact the business. By incorporating forecasting into their strategy, businesses can be better prepared for changes and adapt more quickly to new market conditions. Additionally, the ability to predict changes in the market can help businesses identify new opportunities and stay ahead of the competition.

## **8. Market compliance**

Market compliance refers to the requirement for a business to adhere to laws, regulations, and industry standards in the markets in which it operates. This can include compliance with consumer protection laws, data privacy regulations, environmental regulations, and more. Ensuring market compliance is important for businesses to avoid legal and financial penalties and to maintain a positive reputation with customers and other stakeholders.

Having compliance criteria in their business models, services, and products is crucial for businesses to minimize the risks of non-compliance and potential legal actions. This can be achieved through the implementation of internal policies and procedures, regular training and education of staff, and regular audits to ensure compliance. Additionally, businesses can also seek professional advice or use software solutions to stay up-to-date with the laws and regulations that apply to their operations.

## **9. Streamlined operations**

Streamlined operations refer to the optimization of business processes and systems to improve efficiency, productivity, and cost-effectiveness. This can include automating repetitive tasks, consolidating systems and data, and eliminating bottlenecks and inefficiencies. Streamlining operations can help businesses reduce costs, improve customer service, and increase revenue.

Having streamlined operation criteria in their business models, services, and products is crucial for businesses to improve their overall performance and competitiveness. This can be achieved through the implementation of process improvements, utilization of technology, and data analysis. Businesses can also use lean management principles or Six Sigma methodologies to optimize their operations. Additionally, businesses can also outsource non-core functions to specialized service providers to streamline their operations.

## **10. Reduced risks**

Having reduced risk as a criteria in business models, services, and products is important for businesses to minimize potential losses and maintain financial stability. This can include reducing operational risks, financial risks, and reputational risks.

Operational risks refer to the potential losses that can occur due to unforeseen events such as natural disasters, equipment failure, or human error. Businesses can reduce these risks by implementing disaster recovery plans, regular maintenance on equipment, and employee training.

Financial risks refer to the potential losses that can occur due to changes in the financial markets or the failure of a business to meet its financial obligations. Businesses can reduce these risks by implementing strong financial controls, diversifying investments, and managing cash flow effectively.

Reputational risks refer to the potential losses that can occur due to damage to a company's reputation. Businesses can reduce these risks by implementing effective risk management strategies, such as crisis communication plans, and monitoring their online reputation.

In summary, reduced risk criteria in the business models, services, and products help businesses to minimize potential losses, maintain financial stability, and reduce the likelihood of negative impact on the reputation of the company. This can be achieved through the implementation of effective risk management strategies, regular maintenance, employee training, diversifying investments, and monitoring the online reputation.

## **11. Well-utilized resources**

Having well-utilized resources as criteria in business models, services, and products is important for businesses to optimize the use of their resources and increase efficiency. This can include utilizing resources such as time, money, and materials in the most

effective way possible.

Effective time management can increase productivity and improve the overall performance of a business. This can be achieved through the implementation of time management tools, setting clear goals and deadlines, and regularly reviewing and adjusting schedules.

Effective financial management can help businesses to make the most of their resources by maximizing revenue and minimizing expenses. This can be achieved through budgeting, forecasting, and financial analysis. Additionally, companies can also optimize their financial resources by seeking funding from investors or through loans.

Effective materials management can help businesses to minimize waste and reduce costs. This can be achieved through inventory management, supply chain management, and regularly reviewing usage patterns.

In summary, well-utilized resource criteria in the business models, services, and products help businesses to optimize the use of their resources and increase efficiency. This can be achieved through effective time management, financial management, and materials management. It can help businesses to increase productivity, improve performance, maximize revenue and reduce costs, minimize waste and make the most of their resources.

## **12. Consistency**

Having consistency as criteria in business models, services, and products is important for businesses to maintain a high level of quality and performance. Consistency helps to ensure that products and services meet or exceed customer expectations and that customers can depend on a consistent level of quality from a business.

In terms of consistency in business models, this can mean having clear and consistent processes in place for how a business operates, and ensuring that these processes are followed consistently by employees. This can include things like standard operating procedures, quality control checks, and regular training to ensure that all employees are aware of what is expected of them.

In terms of consistency in services, this can mean providing a consistent level of customer service, and ensuring that customers receive the same high-quality experience every time they interact with a business. This can be achieved by setting and maintaining service standards and regularly reviewing and improving customer service processes.

In terms of consistency in products, this can mean ensuring that products are consistently high-quality and that any variations in quality are minimized. This can be achieved by implementing quality control checks, regularly reviewing production processes, and using consistent materials and methods in manufacturing.

In summary, consistency criteria in the business models, services, and products are important for businesses to maintain a high level of quality and performance. Consistency helps to ensure that products and services meet or exceed customer expectations and that customers can depend on a consistent level of quality from a business. This can be achieved by setting and maintaining standards, regular training, implementing quality control checks, regularly reviewing and improving processes, and using consistent materials and methods in manufacturing.

### **13. Assured Quality**

Having assured quality as a criterion in business models, services, and products is important for businesses to provide high-quality products and services that meet or exceed customer expectations. Assured quality helps to ensure that customers are satisfied with their purchases and that products and services are reliable and perform as expected.

In terms of assured quality in business models, this can mean having a strong quality management system in place to ensure that processes and procedures are followed correctly and that products and services are of the highest quality. This can include things like quality control checks, regular audits, and implementing industry standards.

In terms of assured quality in services, this can mean providing a high level of customer service, ensuring that customers are satisfied with the service provided and that any complaints or issues are handled promptly and efficiently. This can be achieved by setting and maintaining service standards and regularly reviewing and improving customer service processes.

In terms of assured quality in products, this can mean ensuring that products are manufactured to the highest standards and are fit for purpose. This can be achieved by implementing quality control checks, regularly reviewing production processes, and using high-quality materials and components.

In summary, assured quality criteria in the business models, services and products is important for businesses to provide high-quality products and services that meet or

exceed customer expectations. This can be achieved by having a strong quality management system, setting and maintaining standards, regular training, implementing quality control checks, regularly reviewing and improving processes, and using high-quality materials and components. This helps in ensuring customer satisfaction, reliability of products and services and meeting the industry standards.

#### **14. End-to-end visibility**

Having end-to-end visibility as a criteria in business models, services, and products is important for businesses to have a complete understanding of their operations, from beginning to end. It helps to ensure that businesses can track and monitor all aspects of their operations and make informed decisions based on accurate and up-to-date data.

In terms of end-to-end visibility in business models, this can mean having a clear understanding of all the processes and procedures that a business follows and being able to track and monitor them in real-time. This can include things like supply chain management, inventory management, and customer service.

In terms of end-to-end visibility in services, this can mean having the ability to track and monitor the entire service delivery process, from initial customer contact to final delivery, and being able to identify and resolve any issues that may arise. This can be achieved by implementing customer relationship management tools and process management tools.

In terms of end-to-end visibility in products, this can mean having the ability to track and monitor the entire product lifecycle, from design and development to production, distribution, and retirement. This can be achieved by implementing product lifecycle management tools and product data management tools.

In summary, end-to-end visibility criteria in the business models, services, and products is important for businesses to have a complete understanding of their operations, from beginning to end. It helps to ensure that businesses can track and monitor all aspects of their operations and make informed decisions based on accurate and up-to-date data. This can be achieved by implementing various tools such as supply chain management, inventory management, customer relationship management, process management, product lifecycle management, and product data management.



## 9.8 Sustainability

The business models, services, and products must have environmental, social, and/or economic benefits.

### 1. Ecological

Having ecological criteria in business models, services, and products is important for businesses to take into account the environmental impact of their operations, and to minimize the negative impact on the environment. It helps to ensure that businesses can operate in a sustainable way, and contribute to the protection and conservation of the environment.

In terms of ecological business models, this can mean implementing environmentally-friendly practices throughout the entire business operations, such as reducing energy and resource consumption, minimizing waste and emissions, and implementing recycling programs.

In terms of ecological services, this can mean providing services that are environmentally friendly and sustainable, such as using renewable energy sources and eco-friendly transportation. It also means providing customers with information and support to help them make environmentally-friendly choices.

In terms of ecological products, this can mean designing and manufacturing products that are environmentally friendly and sustainable, such as using eco-friendly materials and designing products that are recyclable or biodegradable. It also means providing customers with information about the environmental impact of products and how to dispose of them in an environmentally-friendly way.

In summary, ecological criteria in the business models, services, and products is important for businesses to take into account the environmental impact of their operations, and to minimize the negative impact on the environment. It helps to ensure that businesses can operate in a sustainable way, and contribute to the protection and conservation of the environment. This can be achieved by implementing environmentally-friendly practices, using renewable energy sources, providing eco-friendly services, designing and manufacturing eco-friendly products, providing customers with information about the environmental impact of products and supporting environmentally-friendly choices.

## **2. Environmental**

Having the environment as criteria in business models, services, and products is important for businesses to take into account the impact of their operations on the environment and to minimize the negative impact on natural resources. Environmental criteria help to ensure that businesses are making a positive contribution to the preservation and conservation of the environment.

In terms of environmental in business models, this can mean implementing sustainable practices throughout the entire business operations, such as reducing energy and resource consumption, minimizing waste, emissions, and pollution, and implementing recycling programs. It also means taking into account the environmental impact of the supply chain, transportation and logistics.

In terms of environmental in services, this can mean providing services that are environmentally friendly and sustainable, such as using renewable energy sources, eco-friendly transportation, and promoting conservation and protection of natural resources.

In terms of environmental in products, this can mean designing and manufacturing products that are environmentally friendly and sustainable, such as using eco-friendly materials and designing products that are recyclable or biodegradable. It also means providing customers with information about the environmental impact of products and how to dispose of them in an environmentally friendly way.

In summary, environmental criteria in the business models, services, and products is important for businesses to take into account the impact of their operations on the environment and to minimize negative impact on the natural resources. It helps to ensure that businesses are making a positive contribution to the preservation and conservation of the environment. This can be achieved by implementing sustainable practices, using renewable energy sources, promoting conservation and protection of natural resources, designing and manufacturing eco-friendly products and providing customers with information about the environmental impact of products.

## **3. Social**

Having social as criteria in business models, services, and products is important for businesses to take into account the impact of their operations on society and to be responsible corporate citizens. Social criteria help to ensure that businesses are making a positive contribution to the community and promoting ethical and responsible practices.

In terms of social in business models, this can mean implementing socially responsible practices throughout the entire business operations, such as ensuring fair labour practices, promoting diversity and inclusion, and supporting local communities and charitable causes.

In terms of social services, this can mean providing services that promote social well-being, such as education, healthcare, and community development programs. It also means being responsive to the needs of the community and promoting social justice and equality.

In terms of social products, this can mean designing and manufacturing products that promote social well-being, such as products that are accessible to all, and promote fair trade and ethical sourcing. It also means providing customers with information about the social impact of products and how to use them in a responsible way.

In summary, social criteria in the business models, services, and products is important for businesses to take into account the impact of their operations on society and to be responsible corporate citizens. It helps to ensure that businesses are making a positive contribution to the community and promoting ethical and responsible practices. This can be achieved by implementing socially responsible practices, promoting diversity and inclusion, supporting local communities and charitable causes, providing services that promote social well-being, designing and manufacturing socially responsible products and providing customers with information about the social impact of products.

#### **4. minimizing consumption of resources**

Having minimizing consumption of resources as a criteria in business models, services, and products is important for businesses to use resources efficiently and minimize waste. This can include minimizing the consumption of energy, water, and raw materials, as well as reducing the production of waste and pollution. Minimizing the consumption of resources can help to reduce costs, increase efficiency, and reduce the environmental impact of business operations.

In terms of minimizing the consumption of resources in business models, this can mean implementing resource-efficient practices throughout the entire business operations, such as using energy-efficient equipment and lighting, implementing recycling programs, and optimizing logistics and transportation.

In terms of minimizing the consumption of resources in services, this can mean providing services that are resource-efficient, such as using digital technologies to reduce the need for physical resources or providing customers with information and support to help them reduce their resource consumption.

In terms of minimizing consumption of resources in products, this can mean designing and manufacturing products that are resource-efficient, such as using eco-friendly materials, designing products that are long-lasting and recyclable, and using digital technologies to minimize the need for physical resources.

In summary, minimizing the consumption of resources criteria in the business models, services and products are important for businesses to use resources efficiently and minimize waste. This can include minimizing the consumption of energy, water, and raw materials, as well as reducing production.

## **5. Producing renewable materials**

In the PropTech sector, business models that produce renewable materials would likely focus on using sustainable materials and building practices in the construction and renovation of buildings. These may include using materials such as bamboo, cork, and reclaimed wood, as well as implementing energy-efficient systems such as solar panels, geothermal heating and cooling, and rainwater harvesting. Additionally, these business models may also focus on utilizing smart building technology to optimize the energy efficiency and sustainability of the buildings. Examples of PropTech companies that align with these criteria include companies that develop and sell software for sustainable building design, companies that specialize in green building materials, and companies that provide energy management solutions for commercial buildings.

## **9.9 Functionality**

The products must be modular, appropriate, and capable of interacting with designated systems.

1. Appropriateness: suitability of functions for specific tasks
2. Interoperability: Ability to interact with given systems.
3. Conformity: Ability of the product to comply with standards, conventions or legal provisions, and similar regulations about functionality.
4. Compliance: Features of software that ensure that the software/product fulfills

- application-specific standards.
- 5. Lifecycle assessment
- 6. Accessible functionality of the product

## 9.10 Compatibility

The business models, services, and products must be compatible with current technologies and needs.

1. service and product must be compatible with current technologies
2. Service and products must be suitable with current knowledge
3. Products should be designed modularly. It should be possible to take them apart for reparation or replacement of a part
4. Different products and components are mutually compatible and will function properly when connected.

## 9.11 Feasibility

The solutions must be feasible, understandable, and unambiguous.

1. services must be understandable and unambiguous
2. The qualifications, experience, and competence to implement
3. Economically
4. Feasibility - is the technological approach feasible in principle?
5. Technical risks - are the project challenges manageable?
6. Clear guidelines for using

## 9.12 Reliability

The solutions must be stable and effective over the long term and lead to an increase in employee and client satisfaction.

1. Acceleration of business
2. Increase in employee satisfaction
3. increase in customer satisfaction
4. Long-life using possibility
5. Are sufficient resources provided? Or stop-and-go policy?
6. improving product reliability through systematic failure analysis

7. Performance of the intended adequate functionality
8. Performance according to a specification, with an acceptable degree of compliance
9. Availability to perform a function
10. Maintenance of the original quality level over time under different conditions

### **9.13 Data Management**

1. All types of data should be exchanged and transferred using clearly defined and standardized methods and interfaces
2. External service providers and partners should use compatible and/or the same systems for error-free exchange. In this way, the data is imported into the system in the same data structure and used by the participants
3. The data model is intended to simplify and automate analysis and reporting
4. External data should be delivered via suitable interfaces
5. All data only has to be stored once and centrally and can be edited at any time by the responsible persons

## **10. The innovation development process**

The innovation development process is a systematic approach to developing new ideas, products, and services. The Property Technology Innovation Evaluation Method is a specific example of such a process that was developed in Switzerland and is used in the creation of international property technology standards. The method is designed to evaluate and certify the innovation and technology of products and services in the property industry.

The use of an innovation evaluation method, such as the Property Technology Innovation Evaluation Method, can provide significant advantages for companies. It serves as an international hallmark or quality seal, making it easier for them to operate beyond their domestic market and expand their activities and open up new sources of sales and revenues. Companies using an innovation certificate benefit from an enhanced image and can demonstrate to existing and prospective clients around the world that they operate in compliance with specific standards.

The certificate provides clear guidelines and instructions that, when correctly applied, should ensure that a service or product will satisfy a series of specific quality, innovation, technology, and sustainability criteria. This, in turn, can help to drive enhanced

performance and reliability, allowing companies to attract and retain clients and making their business more competitive and successful.

In summary, an innovation development process and an innovation evaluation method such as Property Technology Innovation Evaluation Method, is a useful tool for ensuring that different products and components are mutually compatible and will function properly when connected, whether you are considering your range of products and services or those offered by other companies and organizations. It also helps in expanding the business geographically and open up new sources of sales and revenues.

Higher levels of client confidence and satisfaction

Gaining the confidence of your clients and keeping them satisfied is crucial for the long-term success of your business. The property technology innovation certificate can help you realize these goals by enabling you to maintain high levels of quality throughout the product development and manufacturing process, or when delivering a service. If your clients are confident about your ability to supply high-quality products or services efficiently and consistently, they are more likely to continue buying your products, using your services, and supporting your business.

Improved market access as a result of increased competitiveness and efficiency, reduced trading costs, simplified contractual agreements, and increased quality.

Easier launch of innovative products due to interoperability between new and existing products, services, and processes. Examples include building lifecycle management, workflow management, energy efficiency, reduction of CO2 emissions, smart cities, and smart buildings.

The property technology innovation certification can make an important contribution to the development of sustainable industrial policy, unlock the potential of innovative markets and strengthen the position of property technology in the global market. It provides a solid platform that can be used to build and disseminate innovative technologies and enhance business practices.

**Build a better business with the International Property Technology Innovation Certification**

The PropTech Academy's central platform – encompassing the construction, real estate, and finance sectors – provides a combination of innovation, technology, and sustainability. As a unique innovative space, the Academy's primary objective is to create an intellectual community of multi-disciplinary professionals to conduct specialist work on innovation that can positively influence the development of these sectors.

At the same time, the PropTech Academy is a regulatory institution that aims to create international standardization and evaluation processes for property technology companies in the real estate, construction, and finance sectors that require quality management systems. These companies set out the requirements that a particular product, service, or process must fulfill to qualify as a 'fit for purpose'.



## PropTech Academy Association

The academy is an independent, non-governmental international organization and is based in Zurich, Switzerland. PropTech Academy and its members bring together a network of experts to share knowledge and develop international property technology standards and Norms. The building of consensus across multiple levels establishes trust and credibility in our organization, and the property technology standards & norms we produce, that make us a global leader in our field. The PropTech Academy's central platform – encompassing the construction, real estate, and finance sectors – provides a combination of innovation, technology, and sustainability. As a pioneer and catalyst for groundbreaking developments, PropTech Academy shapes the future of the global property technology market. It plays a central role in the cutting-edge transformation process.

The primary goal is to create an intellectual community of multi-disciplinary professionals to conduct specialist work on technology and sustainability that can positively influence the development of the sectors.

### **Standards & Norms**

We realized the needs and gaps at the beginning of 2018 and started to develop the first international property technology standards. The primary objective of standardization is the definition of voluntary technology, innovation, sustainability, or quality specifications with which current or future products, production processes, or services may comply. Standardization can make an important contribution to the development of sustainable and transparent industrial policy, unlock the potential of innovative markets, and strengthen the position of property technology in the sectors. It brings a solid foundation to build and disseminate innovative technologies and enhance business practices.

### **Regulations**

The sustainable digital transformation of the markets is the main study program of the PropTech Academy research and development center. Ideas, business models, new services, and products are investigated regularly, and the academy members also develop new assessment and evaluation methods for the companies and business areas. The international property technology standards need a regulated market, and our R&D program also focuses on regulating the business models through certification, labeling, and rankings in the property technology, real estate, construction, and finance sectors.

### **Competence Center**

A property technology competency center is used to coordinate property technology skills with all market players and experts. The centers provide expertise for a project or program support, development of new business models, and new solutions acting both as repositories of knowledge and resource pools for multiple business areas in the real estate, construction, and finance sectors. A center of competency develops common solutions and

acquires new skills that are then spread throughout the ecosystem to increase the likelihood of success of technology adoption and humanizing of the solutions.

### **Education**

As a pioneer of property technology (PropTech) knowledge and the builder of a property technology-based learning system, the Academy aims to cooperate with all universities. For the academy, cutting-edge research and education are inseparable. Each feeds the other. When they're not busy pioneering the frontiers of their fields, Academy members play a vital role in shaping the construction, real estate, finance, and property technology sectors — as advisors, coaches, mentors, entrepreneurs, and much more. PropTech Academy develops education modules such as technology, innovation, and sustainability for the MSc in Real Estate and Construction and plays a pioneering role in the building of the future study; master of science in property technology.

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## Publications

Swiss PropTech Startups Directory	2019
PropTech 2020	2019
Digital Construction	2019
Development of National PropTech Ecosystem Map	2019 – 2022
Real Estate FinTech in Switzerland	2020
What is PropTech?	2020
PropTech Switzerland Innovation Index	2020
Swiss Digital Platforms	2020
PropTech Venture Report	2020
PropTech Startups Innovation Ranking Switzerland	2021
Swiss Digital Platforms	2021
International Property Technology Innovation Leaders	2021
PropTech Switzerland Innovation Index	2021
PropTech Organizations Ranking	2021
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International Property Technology Standards	2022
International Property Technology Innovation Standards	2022
International Property Technology Sustainability Standards	2022
The Fundamental Principles of Startups Innovation Evaluation	2023
Property Technology for Professionals	2023

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## List of Figures and Table

Figure 1: Innovation roadmap

## List of Abbreviations

ADD	Attention Deficit Disorder
AI	Artificial Intelligence
BAS	Building Automation Systems
BIM	Building Information Modeling
EMS	Energy Management Systems
GUI	Graphical User Interface
IoT	Internet of Things
ML	Machine Learning
NLP	Natural Language Process
PC	Personal Computer
SWOT	Strengths, Weaknesses, Opportunities, Threats
R&D	Research and Development

## Index

advantage 24, 26, 32, 37, 38, 42	business plan 28, 29, 47
application 20, 35, 63	Capacity 21
artificial intelligence 16, 18, 22, 32	capital 5, 7, 12, 24, 26, 42, 47
Benchmarking 11	communication 6, 7, 13, 14, 15, 17, 18, 35, 54, 55
Blockchain 22	competition 25, 29, 31, 32, 38, 42, 45, 48, 54
Brand 21, 25	consistency 56, 57
Building 15, 17, 47	
bureaucracy 14	
Business model analysis 11	

consumption 14, 15, 16, 17, 18, 19, 35, 59, 60, 62  
 data 12, 13, 14, 15, 16, 17, 18, 21, 22, 26, 35, 45, 46, 52, 54, 55, 58, 59, 65  
 database 22  
 digital 4, 6, 13, 14, 15, 16, 17, 22, 31, 32, 41, 62, 68  
 Disruption 5, 32, 39  
 Durability 21  
 education 4, 9, 43, 44, 55, 61, 69  
 efficiency 13, 14, 15, 16, 17, 18, 19, 21, 22, 25, 31, 33, 35, 41, 44, 53, 54, 55, 56, 62, 63, 66  
 Energy 16, 19  
 Entrepreneurship 6, 46, 47  
 evaluation 5, 11, 12, 25, 37, 65, 67, 68  
 experience 13, 14, 17, 19, 27, 36, 43, 50, 57, 64  
 flexibility 17, 25, 27, 35  
 Humanity 21  
 IoT 15, 18, 19  
 knowledge 9, 10, 11, 19, 27, 36, 38, 41, 43, 44, 45, 48, 49, 50, 64, 68, 69  
 machine learning 16, 22, 32  
 market 6, 7, 9, 10, 11, 12, 13, 14, 16, 17, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 37, 38, 39, 40, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 65, 66, 68  
 Maturity 21  
 Network 21, 42  
 novel 28  
 Power 21  
 product 9, 13, 14, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 37, 38, 39, 40, 41, 47, 48, 49, 50, 51, 52, 53, 59, 63, 64, 65, 66, 67  
 productivity 18, 31, 41, 43, 44, 54, 55, 56  
 property technology 4, 11, 12, 13, 43, 44, 45, 46, 47, 49, 50, 65, 66, 67, 68, 69  
 quality 15, 17, 25, 30, 32, 35, 36, 37, 38, 40, 53, 56, 57, 58, 64, 65, 66, 67, 68  
 Reliability 5, 21, 64  
 Risk 11  
 service 3, 9, 12, 13, 14, 17, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 37, 38, 39, 40, 47, 48, 49, 50, 51, 52, 53, 55, 57, 58, 59, 63, 65, 66, 67  
 standards 27, 35, 36, 49, 54, 57, 58, 63, 65, 68  
 Sustainability 5, 21, 49, 59, 70  
 SWOT analysis 11  
 technology 4, 7, 8, 12, 13, 14, 16, 18, 19, 20, 21, 22, 28, 32, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 46, 48, 49, 50, 53, 54, 55, 63, 65, 66, 68, 69  
 unique 9, 22, 24, 25, 26, 28, 31, 32, 37, 38, 51, 52, 67  
 Versatility 21  
 visibility 58, 59  
 workforce 42, 44

