ERASMUS+ KNOWLEDGE ALLIANCES

AGREEMENT NUMBER – 2017 - 2854 / 001 - 001PROJECT NUMBER – 588306-EPP-1-2017-1-EL-EPPKA2-KA

Scientific foundations training and entrepreneurship activities in the domain of ICT-enabled Governance

D5.1 Gov 3.0 entrepreneurship, material and mentoring activities

Deliverable Form	
Project Reference No.	588306-EPP-1-2017-1-EL-EPPKA2-KA
Deliverable No.	D5.1
Relevant Workpackage:	WP5: Entrepreneurship Support
Nature:	R
Dissemination Level:	Public
Document version:	V1
Date:	06/10/2020
Author:	Christina Kappatou, PwC
Reviewers	Ben Dhaou Soumaya and Alexander Ronzhyn

Co-funded by the Erasmus+ Programme of the European Union

Contributors:	Dimitrios Sarantis (UNU), Alexander Ronzhyn (NEGZ), Frank Danielsen (UiA), Zoi Lachana (AEGEAN)
Document description:	This document consists of the first version of D5.1 as an outcome of WP5

Co-funded by the Erasmus+ Programme of the European Union

Document History

Version	Date	Author (Partner)	Remarks
Draft v0.10	06/04/2020	Christina Kappatou (PwC)	First version to Quality Assurance Compiling the contribution from the partners
Initial Version	05/09/2020	Christina Kappatou (PwC)	Initial Version
Initial Version	15/09/2020	Frank Danielsen (UiA)	Initial Version
Initial Version	01/10/2020	Zoi Lachana (UAEGEAN)	Initial Version
Final Version	31/10/2020	Christina Kappatou (PwC)	Final Version

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF TERMS AND ABBREVIATIONS

Term/Abbreviation	Definition
AI	Artificial Intelligence
CeDiT	Center of Digital Transformation
D	Deliverable
DG	Digital Government
EC	European Commission
EU	European Union
GDPR	General Data Protection Regulation
ICT	Information and Communication Technologies
IoT	Internet of Things
IS	Information Systems
IT	Information Technology
ML	Machine Learning
MOOC	Massive open online course
T	Task

1. INTRODUCTION

1.1 Purpose of the Deliverable

This present deliverable constitutes the first draft Report on the activities related to Work Package 5 "Entrepreneurship Support" of the project entitled "Scientific foundations training and entrepreneurship activities in the domain of ICT-enabled Governance / Gov 3.0".
The purpose of this deliverable is to present the training curriculum on governance-based entrepreneurship which have been developed as well as to describe the competition on ideas "iGOV Awards 2020".

1.2 Approach for Work Package and Relation to other Work Packages and Deliverables

The goal of the entrepreneurship modules is to provide educational material supporting undergraduates in realizing their business goals and ideas. In this project, we aimed to provide educational material for our competitors in the iGOv DIGITAL Awards 2020. In addition, these entrepreneurship modules is added to our existing portfolio of education material through our developed MOOC platform. Because of that, this work package is highly connected to the other work packages in this project.
The educational modules developed in the MOOC platform is used together with the entrepreneurship modules, offering participants in iGOv DIGITAL Awards 2020 material and tools, which enables them in further developing and realizing their business ideas. This reflects of how the modules are constructed. The first part of the entrepreneurship portfolio focuses on entrepreneurship in general. This is developed by highly recommended professionals and academics. The second part includes the use of information systems in entrepreneurship. This is developed by academics. The last part consists of information systems in general, developed by academics, as a part of the overall project.

1.3 Structure of the Deliverable

The current deliverable is divided in 2 parts as follows:

1st Part: MOOC Material for Entrepreneurship

The first part presents the training curriculum on digital government entrepreneurship as well as the workshops that took place based on the training curriculum.

2nd Part: Competition on ideas & mentoring activities

The second part aims to present the "iGOV Awards 2020" competition. In particular, the 2nd part consists of the following sections:

- Scope & objective of the competition
- Terms of participation & Eligibility Criteria
- Criteria for the evaluation of proposals
- Competition's timeline
- List of participants & description of selected ideas
- Award Ceremony & Prizes

Further, the present deliverable includes 2 annexes each one presenting the communication strategy for the dissemination of the competition and the list of mentors.

2. MOOC Material for Entrepreneurship

2.1 Introduction

With regard to the MOOC material for entrepreneurship, the courses are divided in four parts as follows:

- Introduction
- Entrepreneurship
- Entrepreneurship in the context of Digital Government
- Gov3.0 Technologies

2.2 1st Part: Introduction Courses

2.2.1 Module 1: Introduction to entrepreneurship related to Digital Government

Developed and presented by: Leif Skiftenes Flak

Introduction

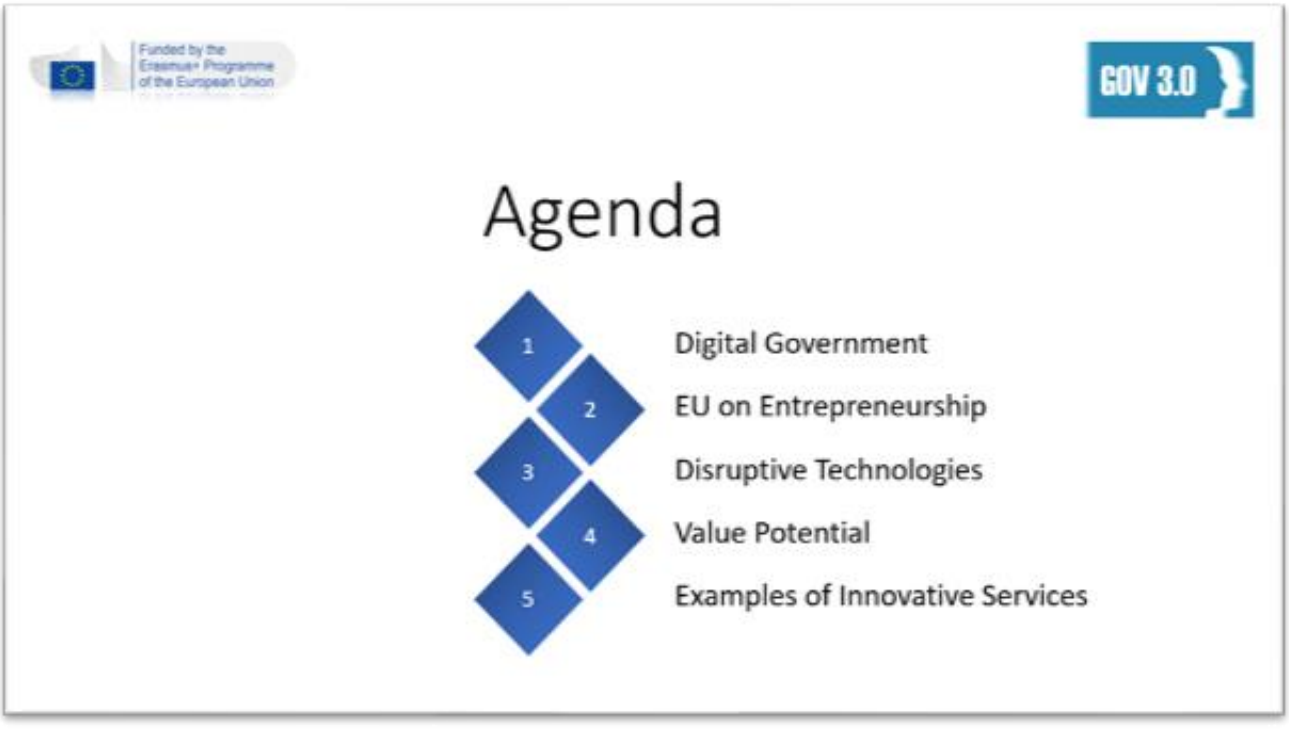
New technologies provide substantial business opportunities and governments can attract customers for new digital services. In addition, the EU is very supportive of entrepreneurs.

This video is an introduction to entrepreneurship related to digital government.

Course manuscript

My name is Leif Skiftenes Flak. I am a professor of information systems at the University of Agder and also the director of the Center of Digital Transformation (CeDiT). It is a pleasure today to give an introduction to entrepreneurship related to Digital Government.

I have a few things on the agenda. I will talk about Digital Government, say a few things about that. I will also say very briefly what the EU thinks of entrepreneurship. Then we will move into some disruptive technologies. Talk a little bit about the value potential in entrepreneurship related to Digital Government. And end up with some examples of new and innovative services.



Digital Government has been around for quite some time. We started to talk about Digital Government, or Government 1.0, as we call it today, in the late 1990s. But of course, governments have been substantial users of technologies way

before that time, but that was when we started talking about electronic government. Typically, at that point, it was quite basic services. We used the internet to provide information and basic services to citizens. And businesses, of course. Then after some time, we moved into what we call Digital Government 2 or eGovernment 2.0. This refers to the use of services related to web 2.0 and user interaction with the government. So, with the rise of social media, typically governments also utilized this, and integrated this into their service provision in various aspects. Today, we are talking about Digital Government 3 or Government 3.0, referring to rise of new and disruptive technologies and how governments can use these in their service provision, both internally and in related to citizens and businesses. Some of the technologies that are worth mentioned are typically Big Data, Machine Learning, Artificial Intelligence, all utilizing the vast amount of data that we have now. Typically, being utilized for decision support and also automation, policy modeling and policy evaluation in various forms. So, as you can see, Digital Government has gone through a number of generations and I am sure we will se more generations. We are where we are today, and we have some really disruptive technologies that makes a good course for new businesses, actually. And this is what we will be talking about later today.

A few words of what the EU thinks about entrepreneurship. Entrepreneurship is considered very important by the European Union. It is a way for Europe to grow and needs smaller and medium sized businesses. And European union is very keen to support start-ups in general but also in the area related to Digital Government.

Let me talk about a few of the disruptive technologies that are seen as a major source of business potentials these days. One is related to the Internet of Things. The Internet of Things typically are a collection of sensors that generate data. These sensors can be used for a variety of things, but it is first when we get good communication technologies, such as 5G, for instance, that we will be able to move these data, collect them and then, of course, analyze and manipulate them. And for manipulating and analyzing large amount of data, we need big data analytics, we need typically machine learning or artificial intelligence. So, these three bundles of technologies will really enable us to do things completely different from what we have been doing previously. I will get back to this with a few examples in not too long.

The value potential in digitizing government has been considered by many. What you see here is from a report made by McKinsey that estimates that digitalization in governments around the world is likely to free up to around 1 trillion dollars annually, in economic value. So, there is substantial value to be had if we can really utilize the potential in the digital technologies. Further, if we look at one specific technique such as artificial intelligence, this is considered as having really massive economic potential. Artificial Intelligence alone, has been considered by McKinsey, to have the potential to create somewhere between 3.5 trillion and 5.8 trillion in value annually. This is not just in government; this is across a number of business functions in 19 industries. So, as you can see, the value potential in new technologies and also related to Digital Government is certainly substantial.

So, let me move into a couple of examples on how we can use these technologies to generate business ideas. This example here is from Atlanta in Georgia in the United States where some universities came together to work with the Atlanta Fire Rescue Department to develop predictive analytic software aimed at identifying buildings that have a higher likelihood of fire incidents. That would be nice, wouldn't it? If we could predict where the fires would be in the near future, we could add preventive maintenance. And this is certainly something that the fire rescue departments would want to know. So, that is one example where we used existing data to be able to predict future incidents that would need government attention.

Another example of somebody who made a business out of Internet of Things technologies is MyTown and the MyTown app. This is an app that can provide 30 different types of information sources to citizens. And the app also enables users to report problems such as a pothole, streetlight outage, parking concerns and so on. And if you integrate this app with a number of data sources, you can really provide a very useful interface between citizens and the municipality or the city on the other hand. And this is what they did. And this app is currently being used in more than 30 cities all across North America. And it is being used by some 3.6 million users. So, relatively recent app, relatively simple technology. But this is a very useful service that governments might buy and that citizens will find very useful.

So, to summarize. We have a number of new technologies that certainly provide a number of new business opportunities. And not only opportunities, there is certainly also substantial value to be created here. And to end it off, the EU is really keen to support your business. They want you to succeed. And they have support mechanisms in place. So, have a look at EU website if you have a business idea that you want to start up. And I hope this was a nice introduction. I hope this gave you some motivation to start a business related to Digital Government. Thank you very much for your attention and fingers crossed for your business idea.

References

https://emerj.com/ai-sector-overviews/ai-government-current-ai-projects-public-sector/

Chui, M., Manyika, J., Miremadi, M., Henke, N., Chung, R., Nel, P., & Malhotra, S. (2018). Notes from the AI frontier: Applications and value of deep learning Retrieved from https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-applications-and-value-of-deep-learning#part3

Dilmegani, C., Korkmaz, B., & Lundqvist, M. (2014). Public-sector digitization: The trillion-dollar challenge Retrieved from https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/public-sector-digitization-the-trillion-dollar-challenge

European commission. (2019). Promoting entrepreneurship. Retrieved from https://ec.europa.eu/growth/smes/promoting-entrepreneurship_en

2.3 2nd Part – Entrepreneurship in general

2.3.1 Module 2: Disciplined entrepreneurship

Developed and presented by: Muris Letic

Introduction

Many students have thoughts and ideas of new products or services, but not everyone knows how to realize these ideas. This video has the goal of introducing students to the possibilities in turning the ideas into businesses. These five-video series are about entrepreneurship in general.

Course manuscript

Hey, and thanks for watching the videos. My name is Muris Letic and I work as the incubator manager for the student incubator at the University of Agder. I want to start out by letting you know that there is not one universal way of starting a business. There have been written a lot of books with methodologies and they have been evolving over time.

Considering the format of the entrepreneurship contest you are entering we are using Bill Auletts Disciplined Entrepreneurship. This book that aims to create innovation driven entrepreneurship by using the tools and methods of multiple other books, while systemizing it into steps that you can take. The books will go more into detail on the different steps, but the videos should give you a good overview.

will also use some videos from a 3 Day Startup event from Kristiansand in Norway. 3 Day Startup is a non-profit organization from Texas that hosts courses on entrepreneurship all over the world. 3 Day Startup is based on Lean Startup methodology, that's incorporated through the steps of disciplined entrepreneurship.

The course will go through the process in a linear fashion, but the process of starting a business is not a linear process. You will most likely have to pivot and do changes to the idea or the concept along the way.

We are starting with market and customer segment. Then we proceed to what you do for your customers. Then how you make money. And in the end, how you design your product.

Ill end this introduction video with a video clip from 3 Day Startup in Agder where Nick Chagin talks about some key principles for Startups.

References

3 Day Startup. (2019). 3 Day Startup. Retrieved from https://www.3daystartup.org/about/

Aulet, B. (2013). Disciplined entrepreneurship: 24 steps to a successful startup. Hoboken, New Jersey: John Wiley & Sons.

Aulet, B. (2017). Disciplined entrepreneurship workbook. Hoboken, New Jersey: John Wiley & Sons.

2.3.2 Module 3: Customer and Market

Developed and presented by: Muris Letic

Introduction

How do you identify and get to know your customers and market? This video gives advices that can help entrepreneurs with creating a beach market, evaluate the market and how to scale the market.

Course manuscript

The agenda for this video is to talk about market and customer.

In the intro video Nick talked about some key principles of startups. One of them was make something people want. To do so you must know who your customer is. Different customers have different needs, and it's hard to provide something that fits everybody.

So, you could create a new market where you do not have as much competition. For instance, how could you compete with Coca Cola Company in soft drinks markets. They have a lot of marketing money, they have facilities and infrastructure to compete wherever they want on the mass market. But if you make the market narrower you can find openings where you

could compete with them based on the needs of some specific customers. You could compete with them in smaller regional markets where they do not exist, or you could serve a niche where their strengths of being a huge company doesn't really give them a huge advantage. You could for instance make soft drinks based on seasonal fruits in the region. This could be a way to tap into a market where customers want to support the locally produced food and drinks.

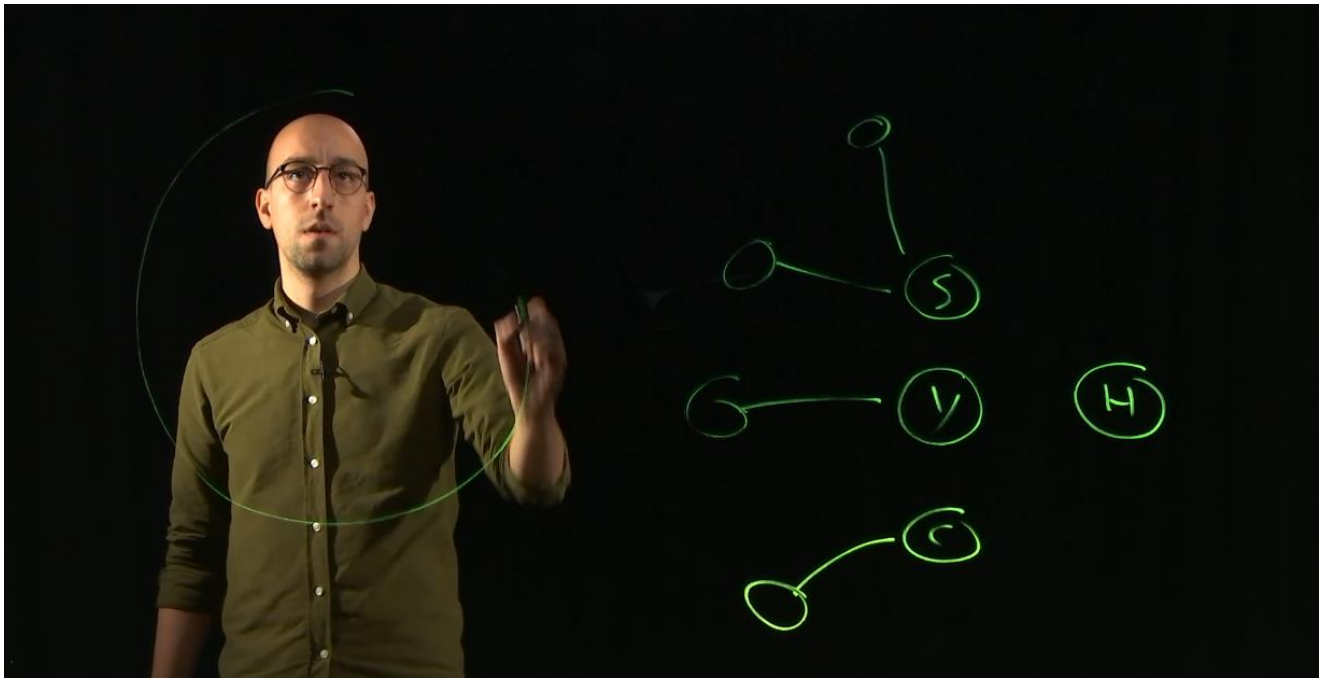
A way to find these markets is to have a target customer. A target customer is a group of potential customers who share many characteristics and who would have similar reasons to buy a product or service.

You should brainstorm who your target customer could be. List ideas and do not think about weather its crazy or not. Use brainstorming to increase creativity and expand boundaries of possibilities.

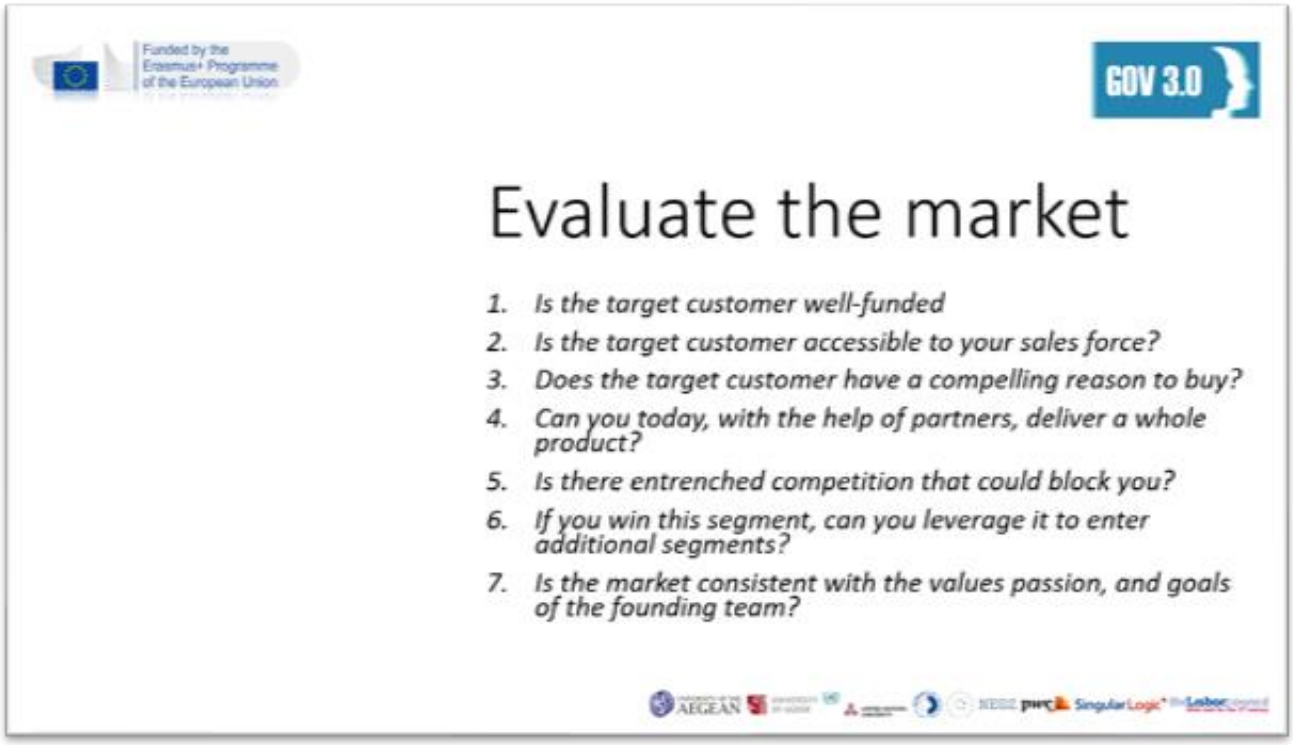
Once you have your target customer you can find your beach head market. This would be the first persons to buy the product. Those that have the problem or need that you want to solve.

Don't necessarily chose the biggest market. There will be a significant learning experience in the first market. Learning on the smaller markets can give you quick exposure among the base of potential customers. Large companies often test in smaller markets and in lower-exposure countries before rolling products out worldwide.

Let's look at how Facebook did this.



When Facebook started out, they selected their beachhead market. Mark Zuckerberg had access to an email list for his dorm, and a list for Phoenix, a Harvard social club to who they sent out invitations to first They got almost 5000 users by the second week. Later they opened Facebook for Stanford, Columbia, and Yale. So, them focusing on just one school in the beginning made it possible for them to focus on that target, and once they won that segment, they could use that momentum to go into other, similar segments. And now they have the World. Let us get back to the presentation.



When decided for the beach head marked, you can ask yourself these following questions:

- is the target customer well-funded?
- It is hard to grow a business when selling to customers without money. You need customers with money to provide positive cashflow that allows you to grow your business.
- Is the target customer readily available to your sales force?
- When starting you want to deal directly with customers yourselves. This is because your product will go through iterations and improvements, and direct customer feedback is essential part of this process. Also, since the product is new, third parties may not know how to create demand for your product.
- Does the target customer have a compelling reason to buy?
- Would the customer buy your product instead of another similar solution? Is the customer content with whatever solution is already being used? In some occasions your primary competition is the customer not doing anything
- Can you, with the help of partners, deliver a whole product?
- Customers want to buy a whole functional solution. Bill Aulets example of this is that nobody would buy a new alternator and install it in their car, even if it is much better than what they currently have. Maybe you have to convince other manufacturers and distributers that your product is worth integrating into their workflows.
- Is there entrenched competition that could block you?
- It is a rare case where no competitors are trying to convince the customers to buy a competing product to meet their need. How strong are they from a customer's viewpoint? (Not technical, and not from your viewpoint). How can you stand out from what your customer perceives as alternatives?
- If you win this segment, can you leverage it to enter additional segments?
- Are there adjacent opportunities where you can sell your product with only slight modifications to your product, or sales strategy? You would like to focus on a target customer but choosing one that makes it hard to scale could be a mistake that is costly.
- And the last one; Is the market consistent with the values, passions, and goals of the founding team?

Remember that you guys are supposed to work with this for a while. If selling to the military is not something that aligns with what your goal is. If you want to sell the business quickly after you start it, then you should focus on market that can show result quickly.

When you have narrowed your market opportunities, it is time to do primary market research and actually talk directly to the customers, don't rely on google! Getting feedback early in the process reduces your risk.

To show you more about this we have a video from 3 Day Startup where they talk about customer insight.

<< 3DS video >>

So, to recap, once you have an idea, you should find a target customer and define the market. The defined market should be a market where you will be able to make some money that you can use to grow. And talk to the customers that fits your target.

References

3 Day Startup. (2019). 3 Day Startup. Retrieved from https://www.3daystartup.org/about/

Aulet, B. (2013). Disciplined entrepreneurship: 24 steps to a successful startup. Hoboken, New Jersey: John Wiley & Sons.

Aulet, B. (2017). Disciplined entrepreneurship workbook. Hoboken, New Jersey: John Wiley & Sons.

2.3.3 Module 4: What can you do for your customer

Developed and presented by: Muris Letic

Introduction

By define your core you can aim for delivering benefits for your customer better than the competitor. In this video, you will get an idea of how you can learn about your customer and what tools to use to make your business attractive for the customers.

Course manuscript

At this step you will beginning to outline what your product will look like. You have defined you customer, what they need, but the details of the products are fuzzy. Starting with learning about your customers will make it easier to connect with customer's needs- Tailoring it to the beachhead market will make it easier to gain market share rather than trying to force a product on a market.

To make this less abstract, you can make a High-level product specification is in essence a drawing. A visual representation of what the product will be when its developed based on what you know at this point. This is the time for you and your team to resolve any issues with the product, because later on it the cost would be higher. It is not necessary to produce it at this point, and I probably shouldn't. When its built, you will get attached to it. This visual representation can also be shared with potential customers, generating an unambiguous understanding of your product. You are still not selling but trying to iterate with the customer.

Describe various features and how these features translate into functions and benefits your customer gains from each. This brochure helps you see your product from the customers point of view.

So far you have focused on meeting the needs of a well-defined target customer. Now you will start looking to the future. The Core is something that allows you to deliver benefits your customers value better than the competitors. This could be a very small part of the whole solution, but it is really important. What do you do that is better than anyone else?

This could also work as a certain level of protection of you going through the hard work of creating a new market or product category just to have some competitor reap the rewards. What does your product do that they cannot duplicate, or duplicate easily?

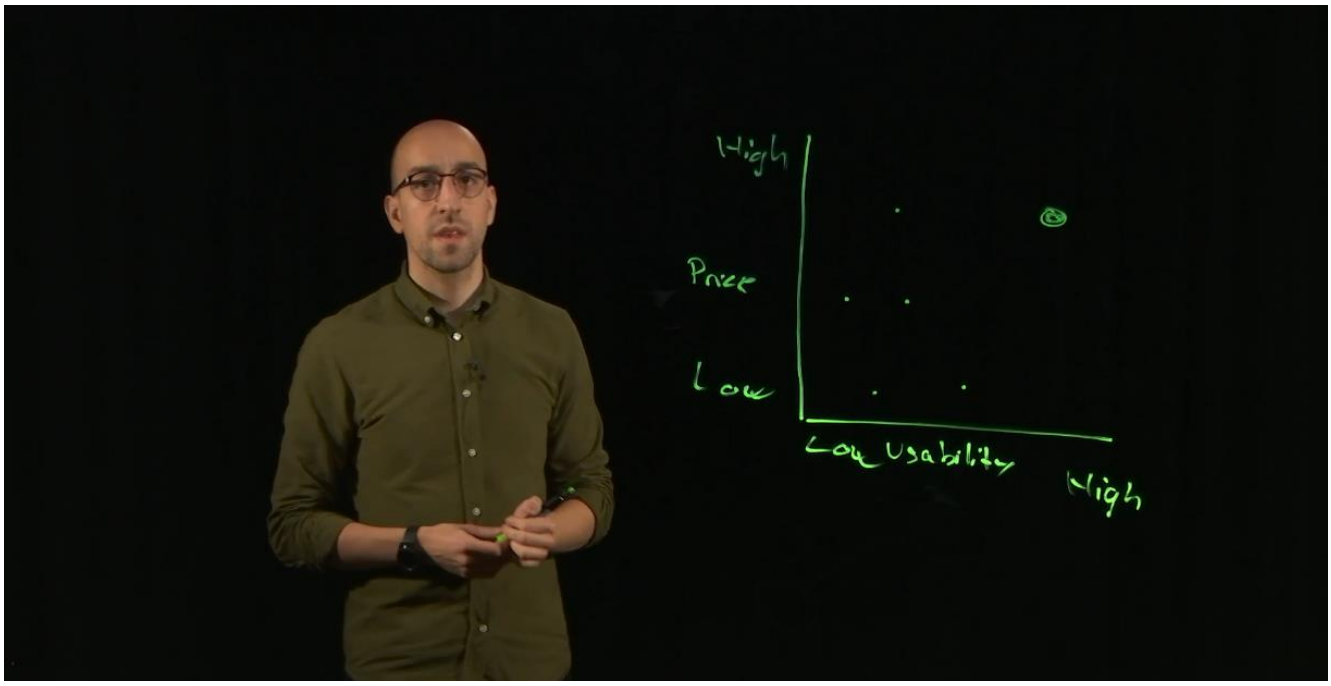
Examples of this can be:

- Customer service: By having processes and culture that focus on customer service allows you to retain customers at a high rate compared to competitor and can avoid cost to get returning customer. This type of core requires a strong commitment from the whole organization and a fanatical focus to execute a high level of customer satisfaction. It often involves extraordinary measures that are hard for other to follow. Example of this is "no question asked refund" or other costly policies. It makes it hard for smaller companies to take the loss on a product that get returned.
- A different one is Lowest cost: You can develop the skills, relationship, process, volumes to outcompete anyone in the market on cost and become the long-term low-cost player. An example of this is Walmart. or Honda when they first entered the US market.
- Or you can focus on User experience: A common one now is user experience. The strategy here would be the best at developing and continually improve the user experience. This is apples core where they focus on the customer experience through all their products.

Once you know what your core is then you need to find a way to translate it to a sustainable advantage that would grow over time. Once you have your core, then you should not change it a lot, instead you should continually make it stronger. But if the customers value something other, then you should look back at it and see how you could fit the customers better.

The next thing to do is to chart your competitors' position.

I will show you a quick and easy way to do this.



There is multiple way to chart the competitive landscape. A simple way to do it is to take the top two priorities of your target customer. This could be for instance price and usability. You should try to be as far to the right topside as possible with your product, as this will result in more value for the customer.

To recap on this. Make a drawing of the product with functions. Use the customers perspective, not technical. Define your core. What will be your competitive advantage? And chart your competitive position. How do you stack up against the competition?

References

Aulet, B. (2013). Disciplined entrepreneurship: 24 steps to a successful startup. Hoboken, New Jersey: John Wiley & Sons.

Aulet, B. (2017). Disciplined entrepreneurship workbook. Hoboken, New Jersey: John Wiley & Sons.

2.3.4 Module 5: How do you make money

Developed and presented by: Muris Letic

Introduction

Entrepreneurs often focus more on products and services and how they can create value for customers than how this can transform into profitable businesses. This video focuses on how entrepreneurs can make money, by using pricing model, key factors and examples.

Course manuscript

By now you know who your customer is, and you know what is your market. You also know what you can do for your customer. But how does that translate into money?

Entrepreneurs often spend a lot of time on how they create value for the customer, but barely any time how that value translate into a profitable businesses. The result is often to adopt whatever model is popular in similar markets. This should be something you focus on and spend time to figure out how you could make money.

The product or service is not the only part of the business that's innovative. The business model can be innovative and, in that way, give you a strong company.

Example of this could be google when they started out. The normal business model for search engines at the time was to have many banner ads, and to sell the advertisement placement to the highest bidder. Google did things differently. They used text-based ads and targeted them based on the keyword used in the search. They found this technique more attractive because they had better data on the effectiveness of individual ads and could make more effective ads based on the data.

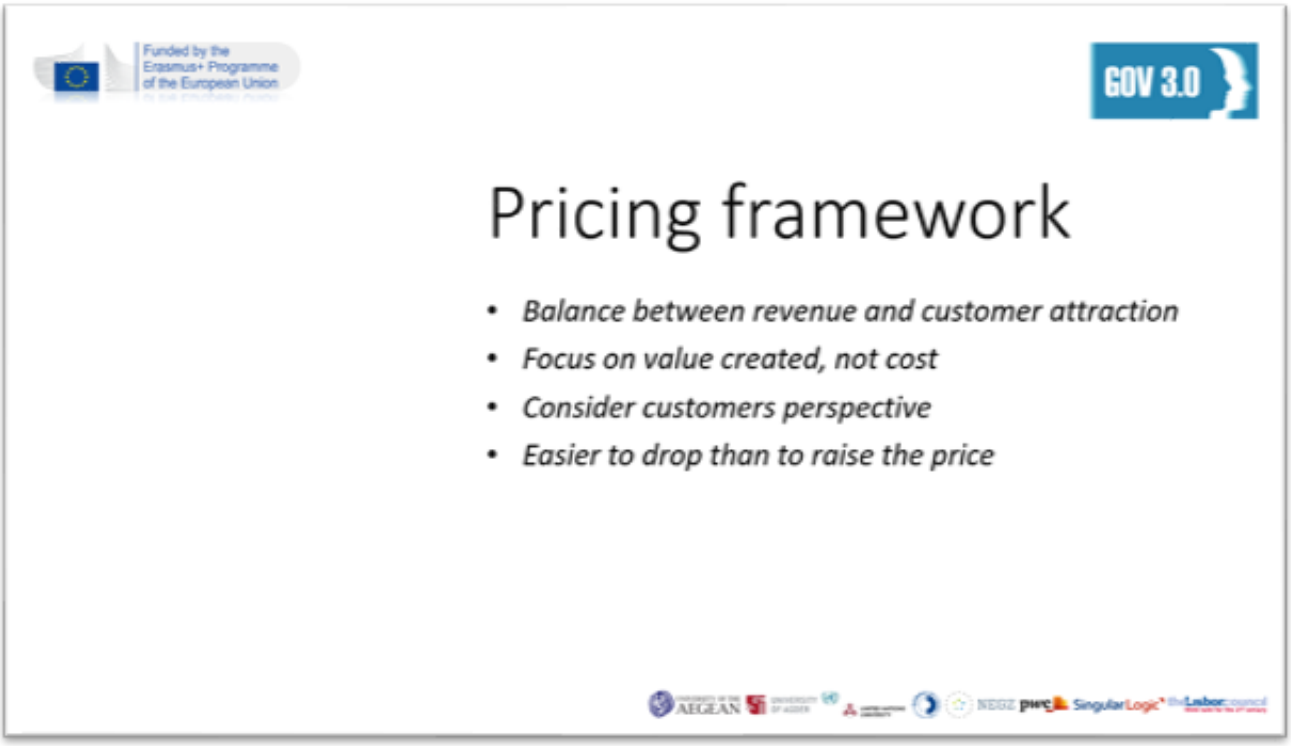
A different example is apple with iTunes. iTunes gave the users the possibility to buy single songs that they wanted instead of having to buy whole albums. On top of that you got the files to keep, unlike other competitors that you had to subscribe to and only had access to the songs while paying.

There are a few key factors when designing your business model. The first factor is the customer. You need to know the customer and what they are willing to do. The second one is value creation and capture. Assess how much value you are providing your customer, and when you are providing the value. Then determine which ways of capturing value match up well. Maybe you cannot monetize all the things your business does for the customer? Then you have to consider the Competition: what is your competition doing? Distribution: make sure your distribution channel has the right incentives to sell your product. Now you might be inclined to have a freemium model where some of the use is free and offer premium membership. While you are providing the service for free your costs are still building up. And the freer users you have, the higher the costs will be. The same goes for the "we will figure it out later" businesses. Instagram is an example of this. They wanted to figure it out later. They didn't have a business model but got lucky when Facebook acquired the business. On the other hand, you have Vine that got shut down by twitter because they did not have a business model for how to capture the value created.

The dangers of free as a business model is that the customers will behave very positively toward the product because there is no friction towards buying the product. You still have not shown that customers want to pay for your service/product. On the other hand, free is a good way to get many to test, and to reduce cost of customer acquisition.

Examples of business models is one-time up-front charge plus maintenance is the most common business model. In this model the customer pays a lot up front, giving your company a big cash infusion in the beginning, but the rest of the cash flow comes from the maintenance charge. Cars are sold like this with the maintenance being the service you have to go every x number of kilometers. This business model will likely minimize your ability to secure a recurring revenue stream. A different one is cost plus. This is a business model where the customer pays a set percentage above the cost of producing the product. This is often seen in government contracts. The challenge with this model is that it requires agreement on the assumptions of how much it will cost, and that the numbers are correct, and that the cost anticipated is correct. You can also charge hourly rate which is a model that rewards activity and not progress. This model is often seen in consultancy firms, and the rates are set by the market demand rather than cost. A different one is subscription and leasing model. This has a set payment each month or another predetermined period. This is a good way to secure a recurring revenue stream. You can have this on a monthly, annual, multiyear. It really depends on what you are looking for. Having it annual or multiyear gives you a bigger up front cashflow, but locks in the customers. Monthly gives the users flexibility, but you could

often extract higher monthly payment than annual, for instance. Licensing your intellectual property to customers and receive royalty can be a business model that gives you very high gross margin. In addition, you do not have to make big investments in production and distribution. But you do need to have IP that is strong, and you need to consider that you are relying on existing companies to take your IP and create new products. You also risk them finding new ways to make products that does not use your IP to avoid paying a license fee. And there is many more, page 169 to 171 in disciplined entrepreneurship goes through 17 different examples of business models.



Using the business model, you can make better estimate on the pricing. The goal for now is to make a first-pass strategy that will allow you to calculate how much value you get from customers and if it is enough to cover your costs.

The pricing model should be an effort to strike a balance between attracting as much revenue as possible and attract customers. Your cost should NOT be a factor in deciding price. You should price based on the value the customer gets from your product. Cost-based strategies leave money on the table. In software development for instance, the marginal cost, or cost of producing one more copy of the software, is basically none. So, pricing based on cost would make it hard to make any money. Instead determine how much value your customer gets from your product and charge some fraction of that. It is important to understand the price from the customers perspective. Research what other alternatives would achieve similar benefits for the customers. Example of this could be anti-virus software. From a customer's perspective your software and the competitors could be the same, even though your technology is more expensive. Would they then pay for that? It is also important to understand that there are different types of customers, that will pay different prices. The customers buying technology early is willing to pay more than the ones that are buying it later. Be flexible for early testers and lighthouse customers. They will often collaborate to improve your product and can influence other customers. But do not give away the product, consider this as revenue as well. Lastly, it is easier to drop the price. So, it is better to price high and offer discounts initially, than to raise the price later. The first customers often get cutting edge technology or products and have usually larger budgets. Convincing other customers to pay more than these would be a hard task.

To recap this video; spend time working on a business model, this could be a thing that sets you apart from the competition or give you great ways to capture value from customers. Set a pricing model that is focused on the value created for the customer. Play around with different numbers and see what makes the most sense.

References

Aulet, B. (2013). Disciplined entrepreneurship: 24 steps to a successful startup. Hoboken, New Jersey: John Wiley & Sons.

Aulet, B. (2017). Disciplined entrepreneurship workbook. Hoboken, New Jersey: John Wiley & Sons.

2.3.5 Module 6: How do you design the product

Developed and presented by: Muris Letic

Introduction

Entrepreneurs often have a big focus on their product. It is important that the product works for the customers but also provides value for your business. This video focuses on methods for product design.

Course manuscript

If you have followed the methodology of the course up to this point you should know who the customer is, you should know the value you bring, how they acquire the product, and how much profit it will bring. Finally, you start with the fun part that is designing the product.

However, if your product is something that have not existed, then you are making certain assumptions based on logic and research.

Bill Aulet uses an example where there were a group of students that wanted to create a smartphone app that told you what to wear based on the weather. The students then made an assumption that smartphone users age 25 -34 uses weather forecast on the phone to decide this.

To test this, they had to split he assumptions into two assumptions.

The first is that people with smartphones use them for weather forecast. The second assumption is that people consult smartphone-based weather forecast to decide what to wear. The first assumption they tested by asking people if they had a weather app on their phone, and if they used it. Over 90% of the people asked said yes. The second experiment gave mixed result. In one group, less than 30% said that they checked weather forecast on phone when deciding what they should wear, while in the other group 70% said that they did. That is when they realized that the first group had a characteristic of being male, while the second group was female. This gave them a segmentation factor that they had not previously considered.

After you have tested your assumptions, and hopefully gotten good results on them, then you can start to define a minimum viable business product. There are three core elements to this.

1. the customer gets value out of using the product
2. The customer pays for the product
3. The product is good enough to start customer feedback.

The MVBP should balance simplicity with sufficiency. Keep this simple and limit the number of variables in your initial product and get something that works into the customers hands. Think snapchat when it launched. It was only a send/receive pictures app where the pictures were available once and for a certain amount of time. LATER they started to implement stories, the chat, the ads.

So, you need to figure out what is the minimum you can build, that give the customer value.

Once you start to sell your MVBP you can start a feedback loop from your customers. They can give your insight in what you could improve, and what functions work well, or do not work. Maybe some functions you have included is rarely used and you can stop supporting that and in the long term reduce production costs.

With the customer feedback you can repeat the process you have been listening to through this series of video courses and keep on building what the customer and the markets want. As you grow your business you have more resources, and your knowledge and skills will improve, making the process faster each time.

So, to recap: Identify what is the key assumptions you have made during this process. Figure out how to test those assumptions. And then once that has done, figure out what's the minimum you can build that gives the customer value. Once you start selling and get customer feedback then you should use that insight and improve and evolve product.

References

Aulet, B. (2013). Disciplined entrepreneurship: 24 steps to a successful startup. Hoboken, New Jersey: John Wiley & Sons.

Aulet, B. (2017). Disciplined entrepreneurship workbook. Hoboken, New Jersey: John Wiley & Sons.

2.4 3rd Part – Entrepreneurship in the context of Digital Government

2.4.1 Module 7: Public sector innovation

Developed by: Christina Kappatou

Presented by: Frank Danielsen

Introduction

Many entrepreneurs want to present new or improved services or products for use in public organizations. This video focuses on what public innovation is and gives a short overview of digital services, infrastructure and digital services usage in public organizations in EU.

Course manuscript

Hi. In this video we are going to talk about Public Innovation. My name is Frank Danielsen. I am a PhD Research fellow at the department of Information Systems at the University of Agder.

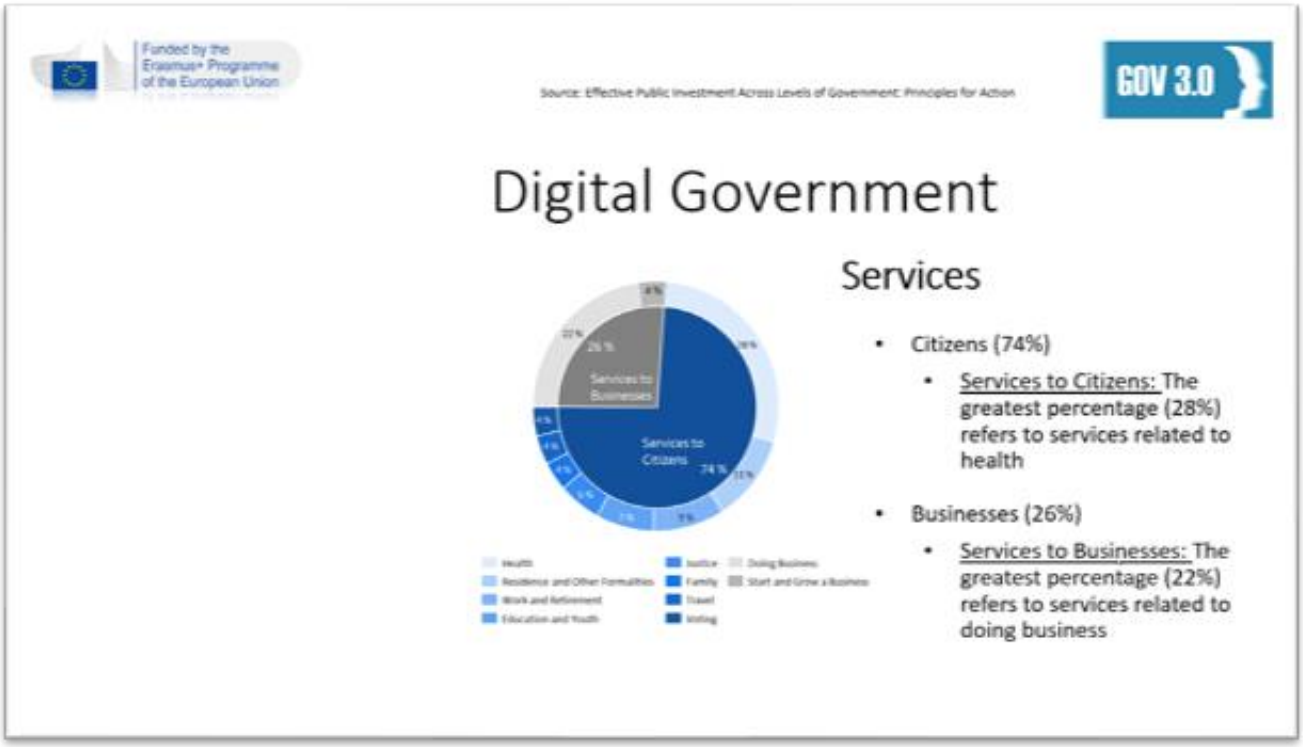
So, first we are going to talk about "What is Public Innovation". Then we will look at Digital Government services and infrastructure. We are going to look at Digital Government usage in Europe. Then we will talk little bit about what drives and what hinders Public Innovation. And in the end, we will look at some examples of innovation projects in Europe.

So, what is Public Innovation? Public Innovation often refers to improvements in public administration or services. You can say that innovation is introducing new processes or creating new products or adopting new organizational structures. Often innovation is something you do in existing organizations while new startups with new or improved ideas often is described as entrepreneurship.

Drawing on definitions adopted for the business sector by Oslo Manual and their adaptation in the Measuring Public Innovation project, we can say that public sector innovation is: "the implementation by a public sector organization of new or significantly improved operations or products. Public sector innovation can also be divided into: Product innovation. which is focusing on implementing new or improved services or products. Process innovation. Which focuses on implementing new or improved methods of producing or providing products and services. Organizational innovation. Which focuses on implementing new or improved ways of structuring and managing organizations.

So, why innovate in public sector? The goal is to obtain and maintain high levels of services that the public sector provides. Also, the public sector faces many challenges that demand new solutions. For instance, economy challenges and societal challenges.

Some of the challenges is that citizens demand better services. These could be personalized and tailored for the specific individual user. The Public sector also needs to renew and work smarter. And they need to increase their efficiency by spending less resources and workforce. When new technologies, and awareness of the possibilities associated with these arrive, it might also initiate innovation projects. And the same with political decisions. It might also start innovation projects.



So, who uses the services provided from the public sector? In EU, Digital Government Services are divided in services to citizens, with 74%, and services to businesses with 26%. Under services to Citizens, 28% refers to services related to health. And under services to Businesses, 22% refers to services related to doing business.

Here you can see examples of Digital Government Infrastructure. Digital Government infrastructure refers to a safe digital identification system that launches a service such as an eHealth portal which allows citizens to access their medical information online. 47% refers to electronic ID which is a service where identification is a requirement in public services. It is important for entrepreneurs, when designing solutions that might involve these parts, that they must consider how to use these or at least know that these solutions exists and understand the infrastructure. For instance, often Governments demand that identification of users MUST use their electronic ID solution. If you are designing an application that will use identification of citizens, then you need to be aware of electronic identification.

Here you see an overview of how many citizens in EU countries that are using Digital Government services. It shows that 58% of the EU citizens who need public services, choose to do this online. In Estonia, Finland, Sweden, Denmark, the Netherlands, and Lithuania, more than 80% of internet users uses digital Government services.

On this slide, we see that the most advanced digital economies in EU. And they are Finland, Sweden, the Netherlands, and Denmark while Bulgaria, Romania, Greece and Poland score lowest.

Drivers and barriers can be divided into three factors: Internal, External, and political. Internal barriers and drivers are those that arise within the organization. External drivers and barriers are those that exist in the external environment. And political drivers and barriers are those that arise primarily in the political environment. The internal factor is about human related resources. These can act both as a driver or as a barrier. It includes training, education, incentives, and management & leadership. It is also about organizational structures which includes for instance silo structures and hierarchies. The external factor is about sharing good practices and knowledge across organizations. Collaboration between organizations, both public and private. And the demands from users of public services.

Political factors are about Budgets and funding. Limited money can hinder innovation projects. But it might also force organizations to think anew. It is also about Policy decisions and requirements at the EU level. And it is about the Laws and regulations.

Some other challenges in general can be Governments and public organizations are often very complex. There might be a lack of necessary skills and knowledge. There might be hard to communicate with the different parts involved in the innovation projects. And both organizations and individuals might resist change and the risks associated with innovation projects.

Here you see some examples of public innovation projects. The three first is typically innovation projects that governments initiates by them self. Often only big businesses are involved in these innovation projects.

Looking at the last one. Access to public developed data is something that many governments in Europe offers and it is by using these, many entrepreneurial opportunities lies. It gives room for new startups and small businesses.

These are the references used in this video.

I hope this video was informative.

Thank you for the attention and goodbye.

References

Bason, C., Hollanders, H., Hidalgo, C., Kattel, R., Korella, G., Leitner, C., . . . Pröhl, M. (2013). Powering European public sector innovation: Towards a new architecture. Report of the expert group on public sector innovation, European Comission.

Bloch, C., & Bugge, M. M. (2013). Public sector innovation—From theory to measurement. Structural change and economic dynamics, 27, 133-145.

Cooperation, O. f. E., & OECD, D. (2012). OECD Science, Technology and Industry Outlook 2012: OECD.

European Commission. (2018). Digital Public Services. Retrieved from https://ec.europa.eu/digital-single-market/en/digital-public-services-scoreboard

European Commission. (2019). Digital Economy and Society Index Report 2019 - Use of Internet Services. Retrieved from https://ec.europa.eu/digital-single-market/en/use-internet

OECD, D. (2012). Innovation in Public Services: Context, Solutions and Challenges, . Retrieved from Paris: Orga-nization for Economic Cooperation and Development:

Rivera León, L., Simmonds, P., & Roman, L. (2012). Trends and challenges in public sector innovation in Europe. published by DG Enterprise, Brussels.

2.4.2 Module 8: Legal issues

Developed by: Alexander Ronzhyn

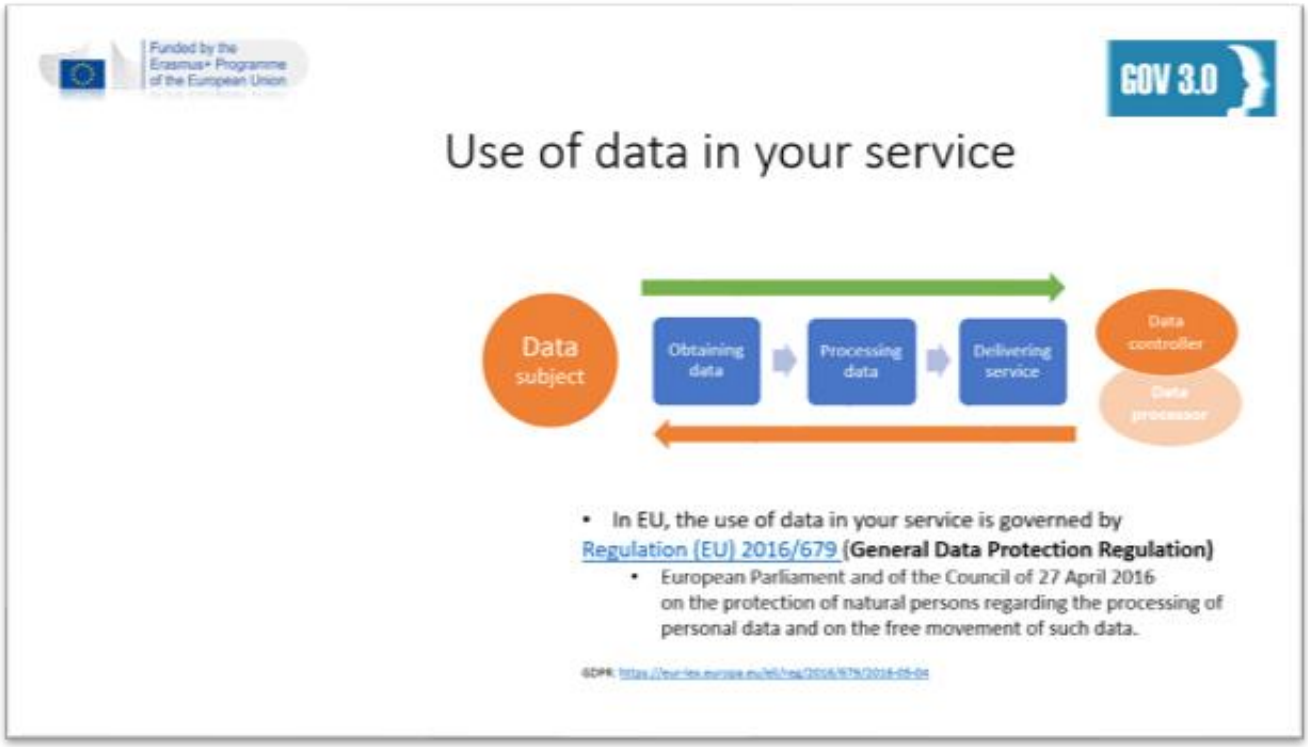
Presented by: Frank Danielsen

Introduction

In relation to using data in application, especially in public organizations, there are many rules and regulations to be aware of. This video introduces the General Data Protection Regulation (GDPR) and how these regulations affect data usage for entrepreneurs.

Course manuscript

Hello and welcome to this presentation where we are discussing the legal issues associated with developing applications in digital government. My name is Frank Danielsen. I am a PhD Research fellow at the department of Information Systems at the University of Agder.



We will speak about the data and how it should be managed in your service. Generally, we can outline three stages in the use of data: obtaining of data / processing of data and delivering a service based on the processed data. Each of these three stages is associated with specific issues and challenges that we will discuss shortly. In the European Union, the data exchange, storage, and processing are regulated by the General Data Protection Regulation from 2016, also known as GDPR. In this document, we can find how the personal data should be treated and what the limitations for the processing and use of such data are. But first we need to define who are involved in the data exchange. GDPR distinguishes between the following actors: Data Subject – That is from whom the data is collected. Usually it is an individual service user. Data Controller – This is an entity, an organization, which controls and stores the data collected from the data subject. Finally, the Data Processor. The organization which processes the data in some way. Data Controller and Data Processor may be the same organization, especially for smaller services.

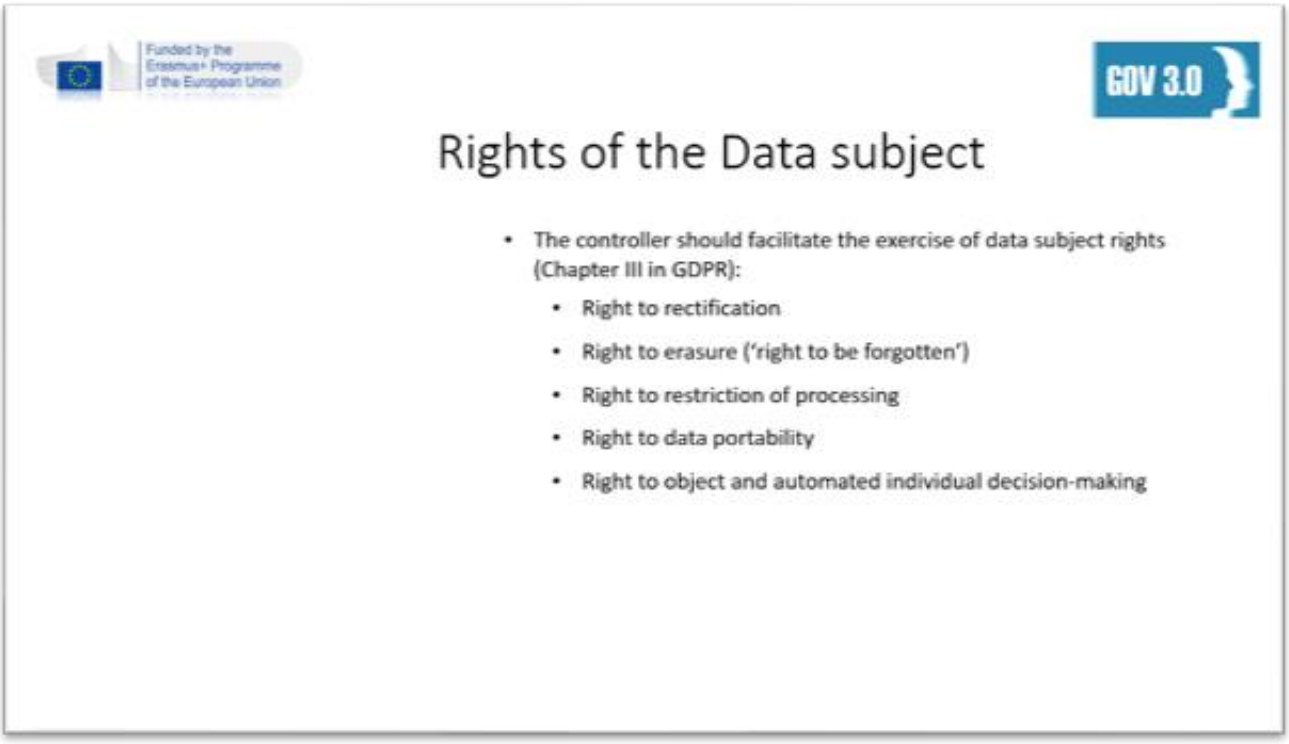
Regarding obtaining data. The focus of the GDPR regulation is the personal data, which means any information relating to an identified or identifiable natural person. Examples of personal data may be Name, an identification number, location data, physical, physiological, genetic data, among others. To obtain personal data from a data subject legally, it is necessary to obtain the subject's consent. The consent is described in the Article 7 of GDPR. Generally, the consent should be explicit and be given for a specific purpose. The consent requirement is the reason why we see all these cookie pop-ups on the websites.

Data are usually obtained for a purpose of processing it in some way, in order to extract new information or provide a service. GDPR, article 9 states that the Processing of personal data is prohibited, unless the data subject had consented for the data processing, OR the personal data had been published publicly by the data subject, OR the processing is necessary for reasons of public interest, for example research. There are some other exceptions as well, but these three are the most relevant for us.

So, you obtained the consent for data processing. What now? Article 5 of GDPR specifies several different principles that should be adhered to during the data processing. The data should be processed lawfully, fairly and in a transparent manner in relation to the data subject. It should be processed only for a specific purpose, for which consent was given. It should be kept up to date and should be updated (rectified) upon data subject's request. It should be stored no longer than necessary. And processed in a manner that ensures appropriate security. Data controller is accountable for compliance with these principles.

To process the subject's data, you also must provide some information to the subject. This information is described in Article 13 and includes: the identity and contact details of the data controller, purposes for data processing, Information on how long the data will be stored,

and who else will have access to this data. Furthermore, data controller should inform the data subject that he or she has the rights to request the erasure of the data and to lodge a complaint with a supervisory authority regarding the possible misuse of their data.



Data subject can also restrict the processing of data at any time and request changes to the data stored. Also, data subject should be able to receive the data in a machine-readable format for the purposes of moving it to a different data controller (this is the right to data portability). Finally, when delivering the service, data controller should ensure that the data is secure and protected. Data processing should adhere to the codes of conduct, developed by the relevant authorities. In a case of a data breach, data controller has an obligation to inform the affected data subject without undue delay. Following the General Data Protection Regulation is crucial for any digital government service that makes use of personal data.

I hope this short presentation was useful for highlighting some of the data-related issues. I also recommend you spend some time reading the regulation yourself. It is available online on the European Union Law Portal. For now, thank you for your attention and goodbye.

References

The European Parliament and Council. (2016). General Data Protection Regulation. Retrieved from https://eur-lex.europa.eu/eli/reg/2016/679/2016-05-04

2.4.3 Module 9: Social innovation

Developed and presented by: Frank Danielsen

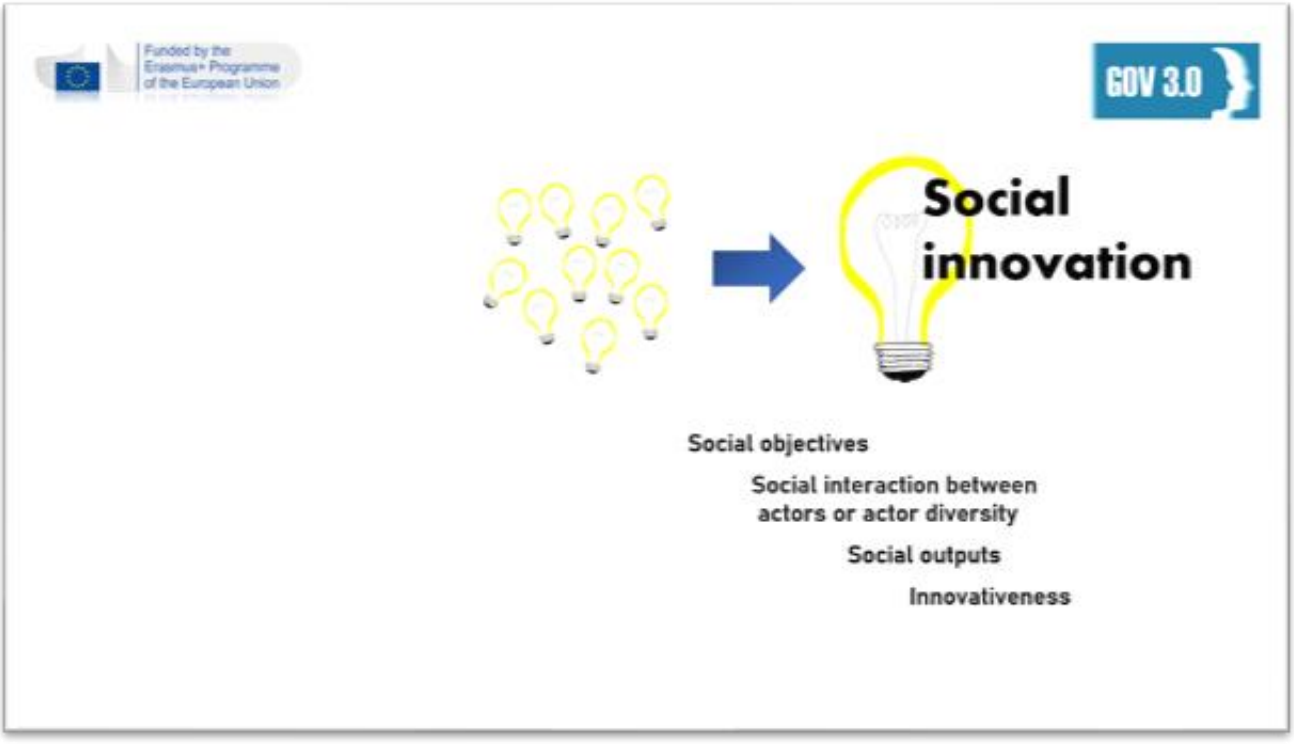
Introduction

The goal of doing something good and creating businesses that improve the society is something that interests many entrepreneurs lately. This video introduces social innovation, presents definitions, and examples, and explains what motivates and hinders social innovation initiatives.

Course manuscript

Hi and welcome to this course about social innovation. My name is Frank Danielsen. I am a PhD Research fellow at the department of Information Systems at the University of Agder.

In this video we are first going to talk about what social innovation is. Then we will talk a little bit about what drives the use of social innovation. Then we will look at some examples where social innovation were used. We are going to look at different stages of social innovation. Then we will look at some challenges. And in the end, we will look at some success factors



So, what is social innovation? Social innovation often includes social objectives. It includes social interaction between actors or actor diversity. It includes social outputs. And of course, it includes innovativeness. Other words that also comes to mind is: openness, collaboration, and inclusion.

To further discuss social innovation, we can say that: It often addresses problems related to environmental sustainability problems and social problems. It should contribute to positive development in society. It is often realized through the joint efforts of a wide range of actors and those actors often has varied competence. It is often aimed at producing a collective good through renewed social practice. And it often requires active collaboration across different sectors.

Now, there are many definitions of social innovation. Here you will see some of them. Murray seems to sum it up in a nice way: "New solutions that simultaneously meet a social need and lead to new or improved capabilities and relationships and better use of assets and resources."

If we take all these definitions and the many more that exists and try and put it all together. we might end up with something similar as this: «Social innovation is innovating in a social way for the social good often with social solutions»

Another popular term within the social innovation umbrella is Digital Social innovation, which is about connecting people and technology to find solutions for social problems. New technology and especially the Internet pave the way for new and better solutions to many problems. Therefore, innovation often include some sort of technology to solve problems or improve existing solutions. But we will continue, here, to focus on Social Innovation in general.

Both Social Innovation and Digital Social Innovation share (mostly) the same goals. A wish to address challenges that are difficult to solve through ordinary means. Some examples are: Environmental challenges as for instance reducing pollution. which is also close to climate change issues. Creating solutions for health and health care issues can be another motive. Social problems like solving integration challenges, citizens personal budgets or active aging might be another driver. Some might say "What is better than doing social good AND earn a living on it?" One last point here is that political decisions can lead to reforms demanding social innovation projects.

Now, let us look at some examples from social innovation projects. First, and I like this one, Caffe Sospeso. This example originates from Naples after World War II. Caffe Sospeso means suspended coffee and it works like this. A customer might buy "Caffe Sospeso" which means a cup of coffee for the price of two coffees. A poor person can later ask if there is an "Caffe Sospeso" available, and if so, he or she can get one for free. This concept has been transferred to other similar concepts, for instance "pending meal". Fair trade is another example. This is an arrangement designed to help producers of food to achieve better trading conditions. The goal is improved social and environmental standards. While these two are not related to public organizations or technology per se, the following two are. Public transportation application. This is about creating a better solution for supporting users of public transformation. With this app users of public transportations can more easily buy tickets, plan their trip, look at real time arrivals or departing. For instance, find out if the bus is late and how late it is. This required collaboration between different entrepreneurs, users, and public agencies. Sharing Wi-Wi. This is about creating solutions for problems regarding the lack of internet access for people living in rural areas. While brainstorming and concretizing the problem, a group of entrepreneurs started exploring possible solutions. This would involve several entrepreneurs, Internet service providers, phone companies, users, and government agencies. By together looking for possibilities to enhance network access, possible solutions might be attainable.

Social innovation can be divided into several stages. Robin Murray identified six stages that take ideas from inception to impact. I will now introduce the six stages and talk a little bit about each of them. First there is the "Problem identification". This stage is about the factors which needs innovation. For instance, crisis, public spending cuts, poor performance and strategy. Environmental issues and social problems might also spark inspirations for new and better solutions. At this stage you diagnose the problem and you frame the question of what you want to fix. It is important that you get to the root cause of the problem and not just its symptoms. And why is that? Because framing the questions right is halfway to finding the right solutions. Then there is the "Proposals and Ideas". At this stage you start generating ideas. Try using design and creativity methods to widen the different options for solutions. The third stage is about "Prototyping and pilots". At this stage ideas get tested in practice. Here you can either try it out or use more formal pilots or prototypes. This stage goes in a loop with the previous since testing, refining, and building solutions is an iterative process. The more you learn from stage three the better proposals and ideas can be made in stage two. Then there is the "Sustaining". When an idea and solution is implemented in everyday practice, you can improve them to ensure long term sustainability. This will carry the innovation forward. In public sector you must identify budgets, people, resources and so on, to ensure the solution will be implemented for future use. At the fifth stage, "Scaling", it is about growing and spreading the innovation. This can be done by traditional methods as licensing and franchising, while spreading the idea, or, providing support and know-how to other possible uses. Finally, the last stage is about "Changing systems". This stage is the ultimate goal of social innovation. Changing systems, or systemic change, involves the interaction of social movements, business models, laws and regulations, data and infrastructures, and entirely new ways of thinking and doing. It involves changes to implement the innovation solution for use over, usually, long periods of time.

There are some challenges or barriers for social innovation that you should be aware of. One of the most important one is that it is difficult to coordinate the different collaborators beyond an organization. Another challenge is that innovation is a risky process, since results are often unknown. And because of this, public organizations might be reluctant to social innovation projects. There might be difficulties having team members with the required skills and knowledge. And public organizations might have regulations or other hinderers that makes it difficult to involve them in the innovation processes. Now, these are just some of the barriers for social innovation. You can read more about this in the paper "The key factors in Social Innovation projects" by Carvache-Franco et al.

There are also some success factors. One, try and involve users and collaborators at every stage. Two, Try and facilitate the collaboration so it is easy for teams to work together. Also find good solutions for virtual teamwork. Three, trying to protect and privatize ideas or protect their intellectual property might hinder or stall the innovation. All these above leads to … collaboration. This is the essence of social innovation and it is important that everyone pulls together and pursues the common goal. Without this, the innovation project might slow down and even fail.

I have included some books that can shed more light on social innovation. I especially like the open book of social innovation by Robin Murray which, among other, describes the six stages of social innovation.

And these are the references used in this video.

I hope this video has piqued your interest in social innovation and that it gave you an understanding of what social innovation is. I wish you good luck with future entrepreneurial projects. Thank you for the attention and goodbye.

References

Carvache-Franco, O., Candela, G. G., & Barreno, E. Z. (2018). The Key Factors in Social Innovation Projects. Mediterranean Journal of Social Sciences, 9(5), 107.

Howaldt, J., & Schwarz, M. (2010). Social Innovation: Concepts, research fields and international trends. Aachen: Sozialforschungsstelle Dortmund.

Kobro, L. U. (2018). La oss gjøre det sammen! Håndbok i lokal samskapende sosial innovasjon: Høgskolen i Sørøst-Norge.

Moulaert, F. (2013). The international handbook on social innovation: collective action, social learning and transdisciplinary research: Edward Elgar Publishing.

Mulgan, G., Tucker, S., Ali, R., & Sanders, B. (2007). Social innovation: what it is, why it matters and how it can be accelerated. 1-52.

Murray, R., Caulier-Grice, J., & Mulgan, G. (2010). The open book of social innovation. London: National endowment for science, technology and the art London.

Phillips, W., Lee, H., Ghobadian, A., O'Regan, N., & James, P. (2015). Social innovation and social entrepreneurship: A systematic review. Group & Organization Management, 40(3), 428-461.

Social innovation academy. (2020). Welcome to Social Innovation Academy. Retrieved from http://www.socialinnovationacademy.eu/

Stokes, M., Baeck, P., & Baker, T. (2017). What next for digital social innovation? Retrieved from https://youngfoundation.org/wp-content/uploads/2012/10/The-Open-Book-of-Social-Innovationg.pdf

2.4.4 Module 10: IS-scenarios

Developed and presented by: Yannis Charalabidis

Introduction

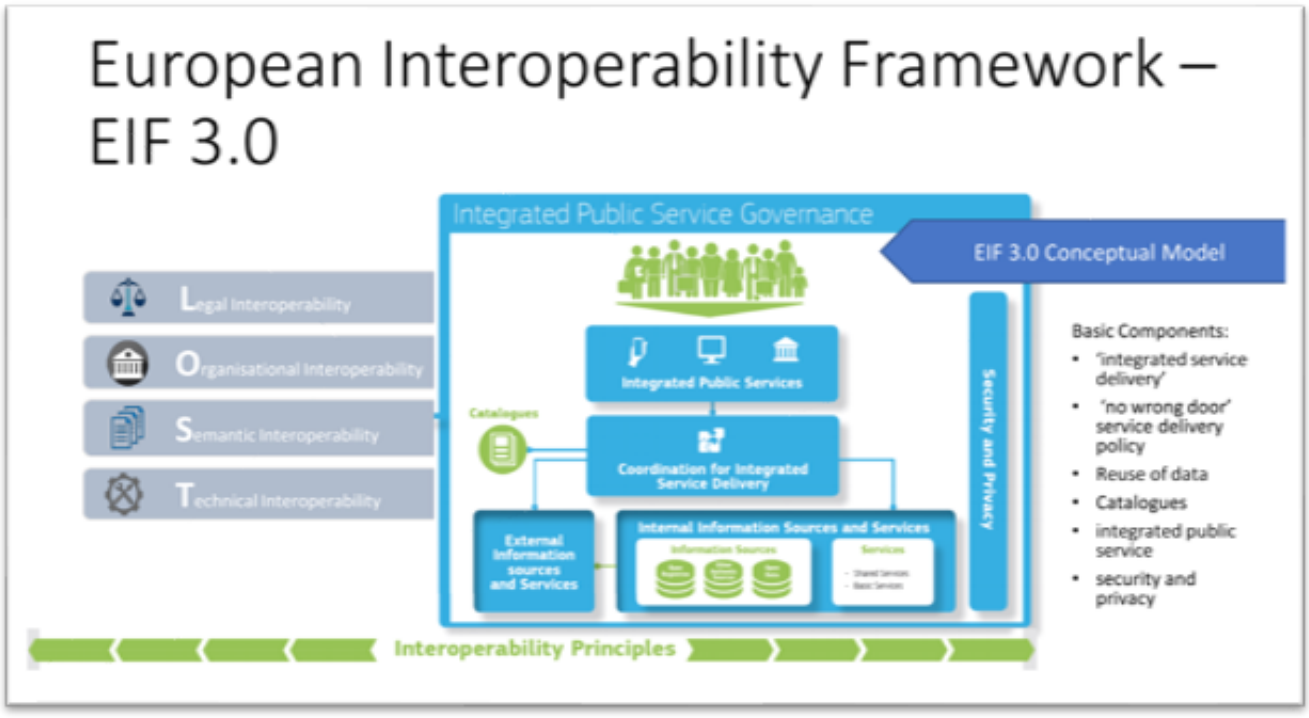
Entrepreneurs in relation to Digital Governance needs to know of the (possible) business models.

This video will examine the types of information systems in Governance and combining information systems that exists with business models to develop new systems. It will also look at case studies.

Course manuscript

Hi. I am Yannis Charalampidis from the University of the Aegean and the Government 3.0 project and today we are going to dive into entrepreneurship but from a viewpoint of the Information systems in Governance.

Now our little module has these three main subjects. First, we are going to look at the types of Information Systems in electronic Governance, digital Governance. Then we are going to combine a little bit the Information Systems that exist with business models to develop new Information Systems. And at the end will have a look at a few case studies that entrepreneurs have already done the job for us.



Now, this might look a little complex to you, but you know we have to be as complex as needed sometimes. This is a part of the European Interoperability Framework. This is a very important document if you want to understand what is happening in European Union Member States and practically all of the progress developed by countries in the world concerning the Digital Governance Infrastructure. So, forget a little bit about the Interoperability layers on the left like legal, organizational, semantic, and technical interoperability. Keep that in mind a little bit and focus at the center. Start from the bottom. If you start from the bottom you will see that at the bottom of this service provision infrastructure, we have the basic sources and the basic services. This is where the core registries of the Government recite and, the core registries are like, you know the financial registry, all of us have a VAT number, it's the citizenship registry and so on, the health registry and so on. On the left you will see the external information sources and services. This is basically one point where new solutions can plug in into the infrastructure. This is where the banks have information systems, various intermediate but also this is where you can develop something and utilize the services, the basic services of the State and the open APIs to give more services to the citizens. The citizens if you see lie on the top of the page and the governments lie somewhere in the middle, the G2G connections. And this is where this coordination for integrated services delivery happens. In some countries happens more and, in some countries, happens less of course. But this gave you a basic viewpoint.

Now if we dive a little deeper, we go into another very important document, search also online for this document it is easy for you to find it, which is called the European Interoperability Reference Architecture, EIRA. Now, EIRA dives a little deeper

into the Information Systems and is trying to develop a basic architecture metamodel. Of course, this is not for everyone but here we talk to information systems builders that can understand viewpoints like this, models like this.

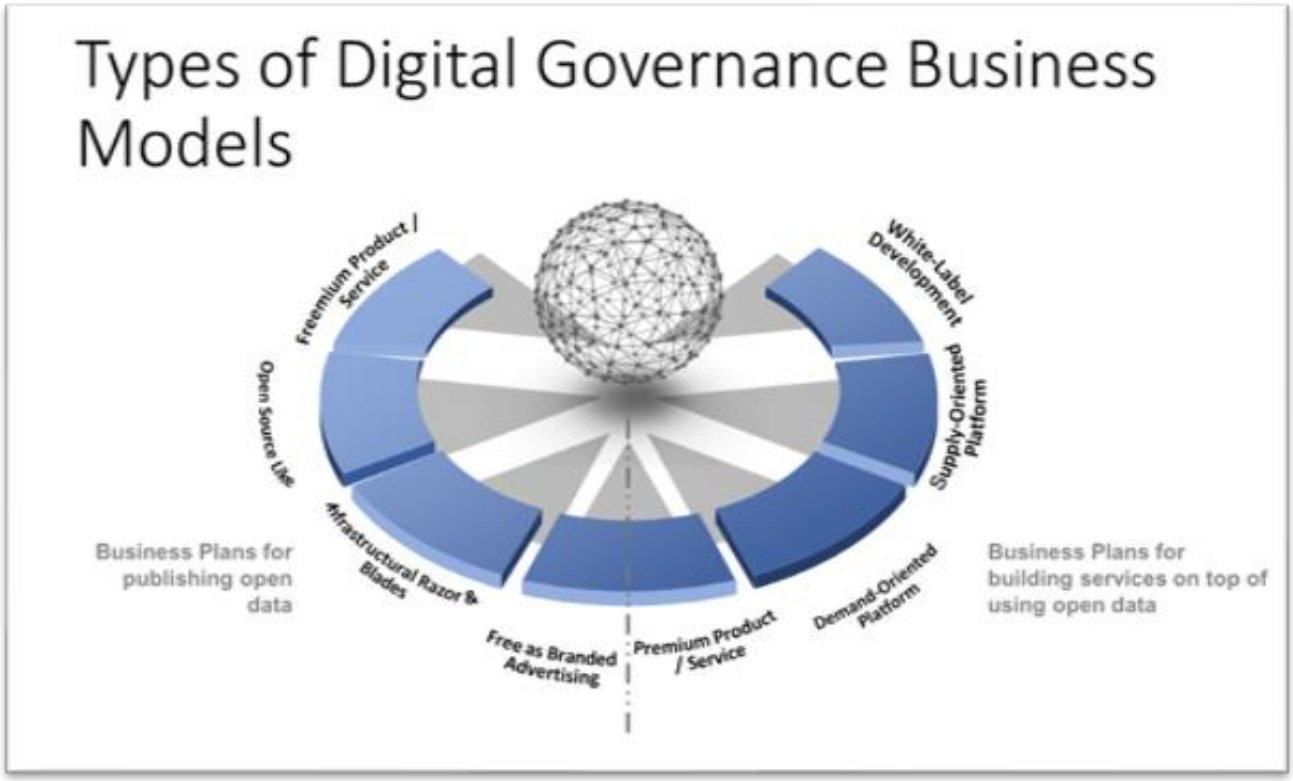
This gives you a basic model of what is happening this service provision. You see in the center you have this public service. This is one of the thousand public service which governments provide to citizens and businesses. And then you see at the bottom how these interconnects through human interfaces, through machine interfaces to basic interoperable European solution or service provision infrastructure. This, also, make us think that when you think about Information Systems in government don't think about one government. Think about many governments that still have to collaborate together. So, apart from only building solutions for one state, for one municipality think about Information systems or web applications or mobile applications that you can develop to provide or intervene in the service provision at an international level. This is where value is being created.

Now, finishing this first part of digital Governance Information Systems types we go a little bit back, let's say into basics. This is one graph, one infographic that all of us in information schools have seen. It is based on the original graphic of Kendall and Kendall, the book about Information Systems design and we have adopted it to include a few well-known applications and systems from the government's sphere. Now, if you start at the top you the strategic and the higher levels. This is where governments work, this is where ministers exist, this is where members of the parliaments exist, this is where European Commission works, at the strategic and the higher level. And you see systems that typically operate at these levels. Expert systems, Management Information systems, this is where the ERP of the stage work. ERP means Enterprise Resource Planning. And at the top you see Group Decision Making, Computer Supported Collaborative Work systems etc. Some of them are still not utilized in the government's sphere, so, it is a right time for young entrepreneurs to bring these approached from the private sector into the public sector. At the bottom you see the knowledge level which is where the everyday employee of the public sector works. Usually, somewhere between office automation, knowledge work, portals, interoperability enables and connections with other institutions in governments and at the bottom is the service provision systems.

This gave us a nice view of what we call "the traditional" more or less, although, within the term traditional we also find very progressed applications with Artificial Intelligent now and Blockchain. But another viewpoint within the Information Systems is what happened during the last twenty to twenty-five years in the electronic commerce, electronic business sphere. Think about applications like catalogue management or like search management or like profiling & personalizing, applications that made a lot of people very successful, a lot of enterprises very big sometimes with solutions like we see

catalogues in amazon about everything or eBay. Solutions that govern the electronic commerce and now it is about time to give, also, new capabilities to the government sector, the public sector. Also, you see payment solution on the bottom right, collaboration & trading, there is not much trading in the public sector so make your own adaptation but this will give you some ideas about how many possibilities exist.

And finally, the big era of mobile. I do not know if you know but we are now in already almost 2020 and there is a new rule coming out in the European Union and it is called "Mobile First". Meaning that every public service sooner or later will first be available with mobile devices and then might be available with the usual web top applications. So, think about what mobile has brought. Web based applications, multimedia, location based, it is a very big market. Think about how many services today we get from the public sector and we do not make any new value out of location based. It does not matter for the state where you are when you travel or when you get the service, while in the private sector it matters a lot. So, think about it. These are a lot of opportunities, see it from this viewpoint. I crossed out travel and entertainment but maybe not for long that the public sector does not provide traveling experiences to the citizens, but you know things might change even in that. At the bottom of course Utility applications, a lot to do with the states, social networking, which is a nice, also, example of something which is booming now in public sectors. The public sectors from all over the world, the public organizations, are trying to find new ways to approach citizens and since most of us spend a lot of time in social networking applications this is where to find us. And you know what? They are still in infancy.



Now, I hope you got the point so just a few more ideas before we go to the cases. See, this is a kind of the typical ways – we make money, or entrepreneurs make money, out of Internet business in general. So you see, for example, on the top left freemium or premium ideas that first you sell something for free but then you make another application which is a little bit better and you ask for a little fee, or some fee or some money to purchase once and so on. You see also applications that are branded as open source and are sold as open source without an initial fee or price but then you make money, you make your living out of supporting it and then growing communities are around it. Or advertising that comes into the point, or demand oriented platforms, or supply oriented platforms. Think about the various and several viewpoints. Of course, this is not the topic of this module, but we just want to connect with the next modules that we talk to you more about making business in the public sector with new innovative applications in the digital sphere. And do not forget about the open data and the open services. You see basically a lot of business plans are built around this idea that open data and open services in the form of APIs exist more and more now in the public sector and this is where to interconnect and utilize something that will give value to citizens.

Now, going towards the end you see a few examples. VouliWatch is an example a lot. It is being operating in Greece for the last five to ten years, maybe even more. It is a nonprofit initiative, so these people are not here to be extremely reach but it is a sustainable business for the last years. Basically, through crowdsourcing it promotes the public dialogue around what is happening in the parliament (= Βουλή, vouli means in Greek the parliament). VouliWatch is a way that citizens follow what is happening in the parliament and what are the members of the parliament doing. Do they perform on their promises? What is their stance in important issues that are discussed? And you know this it now a product that will be sold for money, but you can do things around when you have a community followed by thousands and thousands in this website.

Now, Novoville is a much more direct approach. This is a service provided to municipalities basically, it works in several countries and there are a lot of applications like the Novoville. The idea is that you can your mobile application, you have your mobile device if you are a citizen, and you report issues or maybe you apply for a service. So, it is a way to enhance the communication by having citizens becoming a part of governments so that governments can act faster. This kind of application becoming more and more standard now for municipalities. Of course, no government agency can do everything, so it is provided as a service to the municipality that pays small amounts sometimes for this.

Now, deGov targets the idea and the need of public administrations to develop better websites, or better applications spreading knowledge. So, this is a kind of framework application that provides let us say the basic tools and guidelines to make your website better. It works for services portals, e-participation portals so it gives you the basic tools in an open source format but gives you also some ways to make it better.

Now, VORTALgov a public e-Sourcing platform. It's dealing with a very important issue -not dealing necessarily with the citizens at this day but dealing as we said before at the middle to higher levels to give the ability to the public organizations to restructure and streamline their procurement process. And you see procurement in the public sector is a very crucial issue. So, you have all these things you might need, like templates, information to request for proposals, how to judge on things, how to standardize the tender procedures. It is a very complex mechanism in Europe because it's governed by directives coming from the European Commission around the public procurement. VORTALgov makes this idea becoming a little bit easier for governments to follow.

I think that was about it. We gave you some view of the basic infrastructure layout on information systems, some interconnection between these information systems and new applications, either e-commerce like, mobile like, with some also relations with the well-known business models on how to make new ideas over the internet and a few examples. I think that is all for now. Thank you for your attention.

References

European Commission. (2017). New European interoperability framework. Promoting seamless services and data flows for European public administrations.

European Commission. (2017). ISA² - Interoperability solutions for public administrations, businesses and citizens, EIRA and CarTool. Available online https://ec.europa.eu/isa2/solutions/eira_en.

European Commission. (2019). An introduction to the European Interoperability Reference Architecture (EIRA©) v3.0.0. Available online https://joinup.ec.europa.eu/solution/eira/distribution/eira-v300-overview

Kendall, K. E., & Kendall, J. E. (2010). Systems analysis and design. Prentice Hall Press.

Electronic Commerce Systems, Availabl online https://www.assignmentpoint.com/business/electronic-commerce-systems.html

Molla, A., & Licker, P. S. (2001). E-commerce systems success: An attempt to extend and respecify the Delone and MacLean model of IS success. J. Electron. Commerce Res., 2(4), 131-141.

Mobile App Development, Available online http://www.denvertechsolutions.net/mobile-app-development-denver/

Holzer, A., & Ondrus, J. (2009, April). Trends in mobile application development. In International Conference on Mobile Wireless Middleware, Operating Systems, and Applications (pp. 55-64). Springer, Berlin, Heidelberg.

Huy, N. P., & Vanthanh, D. (2012, December). Evaluation of mobile app paradigms. In Proceedings of the 10th International Conference on Advances in Mobile Computing & Multimedia (pp. 25-30).

Ryan, C., & Gonsalves, A. (2005, January). The effect of context and application type on mobile usability: an empirical study. In Proceedings of the Twenty-eighth Australasian conference on Computer Science-Volume 38 (pp. 115-124). Australian Computer Society, Inc..

Kushchu, I. (2007). Mobile government: an emerging direction in e-government. IGI Publishing.

Kushchu, I., & Kuscu, H. (2003, July). From E-government to M-government: Facing the Inevitable. In the 3rd European Conference on e-Government (pp. 253-260). MCIL Trinity College Dublin Ireland.

Borucki, C., Arat, S., & Kushchu, I. (2005, July). Mobile government and organizational effectiveness. In Proceedings of the First European Conference on Mobile Government, Brighton, UK: Mobile Government Consortium International (pp. 56-66).

Janssen, M., & Kuk, G. (2009). E-Government business models: Theory, challenges and research issues. In E-Government diffusion, policy, and impact: Advanced issues and practices (pp. 1-12). IGI Global.

Empowering Democracy: Vouliwatch - Δυναμώνουμε Τη Δημοκρατία https://vouliwatch.gr/about/en

Redefining Civic Engagement https://novoville.com/

Wir Digitalisieren Ihre Verwaltung! https://publicplan.de/

Leading E-procurement and E-sourcing Platform I Vortal https://en.vortal.biz/

2.5 4th Part – Gov3.0 technologies

This part consists of developed courses in the earlier work packages of this project. The MOOC courses are described in deliverable D3.1 and consist of the following:

2.5.1 The Government 3.0 Project: Introduction

Developed and presented by: Associate Professor Yannis Charalabidis, Department of Information and Communication Engineering, University of Aegean

2.5.2 Smart City Government/IoT

Developed and presented by: Professor Leif S Flak, Department of information systems, University of Agder

2.5.3 Machine Learning and Data Mining

Developed and presented by: Associate Professor Yannis Charalabidis, Department of Information and Communication Engineering, University of Aegean

2.5.4 Blockchain and Smart Contracting

Developed and presented by: Charalampos Alexopoulos, PostDoc Researcher, Department of Information and Communication Systems Engineering, University of the Aegean

2.5.5 Open Government Data

Developed and presented by: Lörinc Thurnay, Researcher, Donau-Universität Krems, Center for E-Governance

2.5.6 Augmented Reality & Virtual Reality

Developed and presented by: Francesco Mureddu, Associate Director, The Lisbon Council

3. Competitions on ideas "iGOv DIGITAL Awards 2020"

3.1 Competition on iGOV Digital Awards

3.1.1 Scope & objective of the competition

Figure 1: Scope of the competition

The scope of the competition was to find the best new applications or technological ideas that can be transformed to businesses.

In particular, the ideas had to utilise new and disruptive technologies, such as Artificial Intelligent or Blockchain combined with big, open and linked data in order to improve public sector efficiency and citizen's quality of life in general. Specifically, the ideas felt into one of the following categories:

a. new applications or
b. technological ideas related to Digital Governance that can be scaled into businesses.

In response to the coronavirus pandemic, the competition was also open to ideas addressing public sector challenges & issues or providing solutions in order to address the impact of the pandemic (i.e. development of mechanisms and platforms using data for the provision of accurate information, forecasting and early warning, development of patients service applications before, during and after admission to hospital etc.).

3.1.2 Terms of participation & Eligibility Criteria

In an effort to reach as many great minds as possible the competition was open to students/researchers coming from Erasmus+ Programme countries[1].

The eligibility criteria are described below:

a. Groups of students and researchers over 18 years of age
b. Proposal submitted in the English language

3.1.3 Criteria for the evaluation of proposals

With regard to the evaluation criteria, the proposals evaluated based on the following set of 5 criteria:

a. Innovation: the degree of new and original Digital Governance idea/application creation,
b. The accessibility of the outcome of the proposal either by citizens or/and public sector users,
c. Economic viability,
d. Impact and scalability and
e. Team capacity: How well suited is the team to make it happen.

3.1.4 Competition's timeline

The competition's timeline is presented below:

[1] EU universities, including universities in Republic of North Macedonia, Iceland, Liechtenstein, Norway, Serbia, Turkey

Figure 2: Competition's timeline

As presented in the figure above, the timeline consists of 9 phases including 3 rounds (Round A, Round B, Round C). In particular, the participants are divided in 3 Rounds based on the time of the proposal submission:

- **Round A participants-** includes the proposal submitted until 06/01/2020
- **Round B participants-** includes the proposal submitted between 07/01/2020 - 15/03/2020
- **Round C participants-** includes the proposal submitted between 16/03/2020 - 29/05/2020

In light of the above, the timeline is as follows:

- **Preregistration:** During preregistration phase, the participants indicated their interest in the following webpage: https://www.gov30.eu/preregistration/.
- **Website:** All the material related to Workshops uploaded in competition's website until 15/11/2019
- **Workshop A:** The participants were able to attend online workshops during the period 15/11/2019 – until the submission

- **Preliminary Application:** In the preliminary application phase, the participants submitted a 3pager (500-1,000 words) describing their business idea. Based on the time of the proposal submission the participants were divided in 3 Rounds. The deadline for the submission of the 3pager was the following:
    - Round A participants – includes the proposal submitted until 06/01/2020
    - Round B participants – includes the proposal submitted between 07/01/2020 - 15/03/2020
    - Round C participants – includes the proposal submitted between 16/03/2020 - 29/05/2020
- **Screening & Evaluation:** During screening & evaluation phase, the applications were screened and the preliminary – round successful participants were informed by the evaluation committee based on the following timeline:
    - Round A participants –the selected participants were informed until 31/01/2020
    - Round B participants – the selected participants were informed until 31/03/2020
    - Round C participants – the selected participants were informed until 31/05/2020
- **Workshop & Mentoring[2]:** Through the mentoring phase, the selected participants received mentoring in order to resubmit their final proposals. The Workshop & Mentoring period is presented below:
    - Round A participants – the selected participants received mentoring until 22/06/2020
    - Round B participants – the selected participants received mentoring until 22/06/2020
    - Round C participants – the selected participants received mentoring until 25/07/2020
- **Final submission:** In this phase, the participants summited their 10pager final proposal based on the template provided during the mentoring phase. The deadline for the final submission of 10pager was on 31/7/2020
- **Selection of nominees:** The evaluation committed selected the final nominees until 15/08/2020.
- **Award ceremony:** The award ceremony took place during ICEGOV 2020 conference on 25/09/2020.

3.1.5 List of participants & description of selected ideas

During the iGOv DIGITAL Awards 2020, 51 draft proposals were submitted from which 37 were selected through the prescreening phase and were assigned to mentors. 16 teams proceeded to the final submission (business plan) and 6 of them were selected in the "selection of nominees" phase and proceeded to the presentation of their idea. During the finals (pitching session) in ICEGOV2020, 3 proposals were selected from the awards evaluation committee. The awards are as follows:

- First place: 5000 euros will be awarded by PwC && 3 free registrations for next year's ICEGOV2021 Conference on Digital Government
- Second place: 2000 euros will be awarded by Lisbon Council Think Tank
- Third place: 1000 euros will be awarded by University of Agder

All the finalists will receive:

1. Registration, travel, accommodation and food costs would be awarded for the final event (ICEGOV2020)
2. Registration fees will be awarded (since they will be applied)
3. Further coaching by world-leading experts from both the Digital Governance and the Entrepreneurship
4. domains towards the enhancement of the original ideas.
5. Contact with possible customers from the Government 3.0 project wider network of public sector
6. organizations in the whole EU.
7. Dissemination from the European Commission services.
8. Contract development with interested public sector organizations.

Table 1: Submitted proposals after screening

#	Title

[2] The list of mentors is presented in Annex B: List of mentors

1	Astrid
2	CITIZENSHIP E-MAIL APPLICATION
3	DIGITAL WE CARE
4	Dynamic load monitoring and control of public transport through artificial intelligence
5	Educate Yourself Today!
6	E-educ
7	Integrated telematics and smart routing system for the Hellenic Post (ELTA) vehicle fleet (motorcycles-cars – trucks)
8	Integration of electronic public services
9	Machine-consumable legislation
10	Open School
11	Project Turing: Misinformation in Portuguese Politics
12	SaferMap
13	Smarty
14	Software Designed to help the Elderly
15	Technological Education
16	Using Machine Learning to create Framework Agreements

After the evaluation process was completed, 6 proposals were selected as depicted below:

Table 2: Top 6 selected proposals

#	Title
1	Astrid
2	Dynamic load monitoring and control of public transport through artificial intelligence
3	Integrated telematics and smart routing system for the Hellenic Post (ELTA) vehicle fleet (motorcycles-cars – trucks)
4	Machine-consumable legislation
5	Smarty
6	Using Machine Learning to create Framework Agreements

During ICEGOV 2020 conference, the proposals were presented virtually. Once the presentations were completed, the evaluation committee evaluated the proposals resulting to the top 3 proposals as presented below:

Table 3: Winners

Place	Title	Country Code	Description
1	Dynamic load monitoring and control of public transport through artificial intelligence	DE	The aim of the project is to use artificial intelligence (AI) in order to better monitor and control the public transportation. This will lead to the following outcomes: increase the efficiency of public transportation, improve customer satisfaction and reduce the environmental impact.
2	SMARTY	AM	"Smarty" is an application which provides accurate and precise knowledge content presented in the forms of lectures, exercises and games. With the help of Smarty the same course may become more interesting and exciting.

			In particular, using Smarty" the students will be able to cover a part or a whole course while having a good background level of knowledge.
3	ASTRID	GR	"Astrid" is a platform where public administrators and political parties can model proposed or current policies and reforms. There, citizens can start assaying those policies using gamification techniques, in order to understand the policy, enhance the existing model, mention possible mistakes or aspects that the administrator did not consider.

3.1.6 Award Ceremony & Prizes

With regard to the award ceremony, the event was originally scheduled to take place in Samos during the summer school 2020. However, the award ceremony held virtually in Athens, during 22 September – 25 September 2020, in conjunction with the ICEGOV 2020 conference due to COVID-19.

During the award ceremony, the finalists received the following prizes:

1. **First place:** 5000 euros awarded by PwC while the winners also received 3 free registrations for next year's ICEGOV2021 conference on Digital Government by UNU-eGOV
2. **Second place:** 2000 euros awarded by Lisbon Council Think Tank
3. **Third place:** 1000 euros awarded by the University of Agder

Further, all finalists received the following prizes:

a. Further coaching by world-leading experts from both the Digital Governance and the Entrepreneurship domains towards the enhancement of the original ideas.
b. Contact with possible customers from the Government 3.0 project wider network of public sector organizations in the whole EU.
c. Dissemination from the European Commission services.
d. Contract development with interested public sector organizations.

3.2 Competition's communication strategy & Dissemination activities

Regarding the competition's dissemination plan, a communication strategy has been developed for the promotion of the competition. The communication strategy is presented in detail in Annex A: Communication Strategy.

Further, the following dissemination activities has been undertaken by the partners of the consortium:

Table 4: Dissemination activities per partner of the consortium

#	Partner	Description of dissemination activity
1	NEGZ	E-Mail of contest announcement to students of the faculty of computer science at University of Koblenz-Landau (two times: one in 2019 and one in Feb 2020, announcing an extended submission deadline), *Number of recipients: 2000*
2	NEGZ	E-Mail to scientific peers in Germany to announce the contest *Number of recipients: 250*
3	NEGZ	Short presentation to students of class on Smart City at University of Koblenz-Landau (teachers: Prof. Wimmer, Dr. Viale Pereira) *Number of recipients: 15*
4	PwC	Weekly posts on social media (Twitter, Facebook, LinkedIn) about the competition
5	PwC	Upload of press releases on project's social media accounts
6	PwC	Upload of newsletters on project's social media accounts

#	Partner	Description of dissemination activity
7	PwC	Drafting of an email in order to disseminate the contest to important contacts.
8	PwC	Preparation of a list title "Important contacts" for the dissemination of the contest
9	UiA	Posted on social media, official social media account for UiA and Information systems
10	UiA	Sent information to partner universities and contacts in Norway, Denmark and Sweden
11	UiA	Presentation for bachelor and master students in Information Systems
12	UiA	Presentation for students and contacts at the School of business and law (UiA)
13	UiA	Emails to students regarding the competition
14	UiA	Posting on internal platforms (Fronter, Canvas) to students
15	UiA	Informed lecturers in bachelor and master levels which informed their classes (Information systems)
16	UiA	Personal following up on interested students
17	UNU	Email to students
18	UNU	Email to professors requesting dissemination with all their students at University of Minho (Portugal) and South Mediterranean University and HEC-High School of Business (Tunisia, part of the Erasmus network)
19	UNU	Presentation, discussion and task assignment to students of the course "Introduction to Digital Governance" at the University of Minho (course taken by Master and Phd students)
20	UNU	Dissemination through two of the newsletters of the University of Minho (reaching all students and academics at the School of Engineering) and newsletter of UNU-EGOV (3335 recipients from electronic governance area, of which 719 are affiliated with one university (339 universities reached in 79 countries worldwide)) https://mailchi.mp/unu.edu/unu-egov-newsletter-december-2019
21	UNU	Dissemination through organization's website: https://egov.unu.edu/news/news/igov-digital-awards-2020-deadline-extension.html
22	UNU	iGov Awards ceremony has taken place in the closing session of the 13th International Conference on Theory and Practice of Electronic Governance (ICEGOV2020) which gathered 341 participants and EGOV experts from academia, public administration, international organisations and industry (from 55 countries worldwide): http://www.icegov.org/track/closing-ceremony/
23	UAEGEAN	Preparation of five newsletters four of which were conducting in the English Language and the other in the Greek Language. The first four are included in the Government 3.0 project website
24	UAEGEAN	Dissemination of the four newsletters through the project's mailing list (reaching students and academics across the Europe, 3984 recipients from the digital governance and electronic government areas, of which) and newsletter of UNU-EGOV (3335 recipients from electronic governance area, of which 181 belong to the public sector while the 3154 left include scientific communities, individuals/ experts in the domain, and organisations that belong to the private sector

#	Partner	Description of dissemination activity
25	UAEGEAN	Dissemination of the newsletter written in the Greek Language through the Digital Governance Research Centre mailing list, reaching 1924 recipients
26	UAEGEAN	Dissemination of the contest's press release to students of the Department of Information and Communication Systems Engineering, School of Engineering at the University of the Aegean reaching about 1500 pre- and post- graduate Students
27	UAEGEAN	Short presentation to post graduate students of the MsC in Electronic Government at the University of the Aegean (teachers: Prof. Yannis Charalabidis, Dr Charalampos Alexopoulos) *Number of recipients: 30*

Annex A: Communication Strategy

Table 5: Communication Strategy

	Tasks / Actions	Who	Due	Status	Partners involved in the completion of the respective task							
					UAEGEAN	UNU	DUK	SILO	UKL	LC	UiA	PwC
1	**Mentoring phase**		**4/12/2019**	**Done**								
1.1	Propose mentors	All partners	4/12/2019		Done	Done	Done	Done	Done	Done	Done	Done
2	**Update competition's newsletter content**		**16/1/2019**	**Done**								
2.1	Propose prizes	All partners	15/1/2019		Done	Done	Done	Done	Done	Done	Done	Done
2.2	Assess the possibility of offering a monetary prize	PwC	15/1/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
2.3	Draft competition's newsletter	UAEGEAN	15/1/2020		Done	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.4	Disseminate competition's newsletter	UAEGEAN	16/1/2020		Done	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	**One to one communication**		**15/1/2019**	**Done**								
3.1	It's expected that all of the consortium participants will find at least 1 person that poss social influence in order to promote the competition & attract more participants	All participants	15/1/2020		Done	Done	Done	Done	Done	Done	Done	Done
4	**Forward competition's newsletter to stakeholders**		**16/1/2020**	**Done**								
4.1	It's expected that all of the participants will promote the competition by sending the newsletter to their mailing list	All participants	16/1/2020		Done	Done	Done	Done	Done	Done	Done	Done
5	**Promote competition through EACEA communication channel**		**16/12/2019**	**Done**								
5.1	Draft a letter for the EC / EACEA in order to promote the competition	PwC / UAEGEAN	13/12/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
5.2	Send competition's newsletter & letter to EC / EACEA (JRC mailing list - francesco)	PwC / UAEGEAN	16/12/2019		Done	N/A	N/A	N/A	N/A	N/A	N/A	Done
6	**Promote competition using the social media accounts of the project**		**23/12/2019**	**Done**								
6.1	Draft a message for constant updates on social media	PwC	10/12/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
6.2	Upload weekly updates to inform social media users about the competition - Facebook	PwC	Weekly updates		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
6.3	Upload weekly updates to inform social media users about the competition - Twitter	PwC	Weekly updates		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
6.4	Upload weekly updates to inform social media users about the competition - LinkedIn	PwC	Weekly updates		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Done
7	**Sponshorships**		**15/1/2020**	**Done**								
7.1	Propose possible sponsors for a monetary prize	All partners	15/1/2020		Done	Done	Done	Done	Done	Done	Done	Done
8	**Disseminate contest among students**		**15/1/2020**	**Done**								
8.1	Inform your students about the contest	Universities partners	15/1/2020		Done	Done	Done	N/A	Done	Done	Done	N/A

Annex B: List of mentors

#	Mentor	Entity (i.e. company's name, university's name, etc)	Specialization / Position
1	Yannis Charalabidis	University of the Aegean	Associate Professor
2	Leonidas Papaioannou	Pricewaterhousecoopers	Director
3	Daphne Tsalkadra	Pricewaterhousecoopers	Manager
4	George Meletiou	Pricewaterhousecoopers	Manager
5	Loukis Euripidis	University of the Aegean	Professor
6	Aggeliki Androutsopoulou	University of the Aegean	Service Delivery Manager
7	Harris Alexopoulos	University of the Aegean	Senior Researcher, Postdoc
8	Dimitris Sarantis	United Nations University	Researcher, Postdoc
9	Soumaya Bendhaou	United Nations University	Research Coordinator
10	Francesco Mureddu	Lisbon Council	Associate Director
11	David Osimo	Lisbon Council	Director of Research
12	Marcello Verona	Lisbon Council	Associate Director, IT and Knowledge Platforms
13	Andrea Giame Bodei	Intelligence Framework	CEO, CTO
14	Enrico Ferro	Istituto Superiore Mario Boella	Titlehead of innovation development departmnet
15	Leif Flak	University of Agder	Professor
16	Gianluca Misuraca	European Commission	Senior scientist
17	Vishanth Weerakkody	University of Bradford	Professor
18	Timos Sellis	Swinburne university of technology, Australia	Director
19	Frank Danielsen	University of Agder	PhD Research Fellow
20	Tove Engvall	University of Agder	PhD Research Fellow
21	Sofia Tsekeridou	INTRASOFT	Manager
22	Delfina Soares	United Nations University	Professor
23	Luis Barbosa	United Nations University	Professor
24	Judy Backhouse	United Nations University	Senior Academic Fellow
25	Christos Xenakis	University of Piraeus	Professor
26	Euripidis Loukis	University of the Aegean	Associate professor
27	Zoran Jordanoski	United nations university	Senior academic fellow
28	Charalampos Alexopoulos	University of the Aegean	Postdoctoral researcher
29	Eliane Torres	United nations university	EGOV & electoral and evaluation expert
30	Robert Krimmer	Tallinn university of technology	Professor
31	Maria Wimmer	Institute for IS research, university of koblenz-landau	Professor