Anish Kaushal (University of Trento, anish.kaushal@studenti.unitn.it)
Sara Polak (University of Twente, s.polak@student.utwente.nl)
Vasile Adrian Bogdan Pop (University of Trento, pop.bogdan.pvab@gmail.com)
Anisia Spyrolari (University of Trento, anisia.spyrolari@studenti.unitn.it)
Giovanni Valcarenghi (University of Milan, valcarenghi.valcarenghi@gmail.com)
Junhang Yu (University Paris-Saclay, junhang.yu@masterschool.eitdigital.eu)

digilaw.info@gmail.com

EIT Digital Summer School I&E students project report

Secure E-Governance, Tallinn, 3/8/2020-14/8/2020

The EIT Digital – European entrepreneurs driving digital innovation & education

EIT Digital

Anish Kaushal, Sara Polak, Vasile Adrian Bogdan Pop, Anisia Spyrolari, Giovanni Valcarenghi, Junhang Yu

/ August 2020

www.eitdigital.eu

Table of contents:

1. Executive summary 2
2. Problem and solution 3
3. Business modelling and planning 6
   - 3.1 Business modelling 6
   - 3.2 Business planning 11
4. Business development process 15
5. Self-evaluation 20
6. References, web links 26

1. Executive summary

Governments have innovated in many ways, but one element that has not been touched is rules and regulations. As human beings, we are facing digital innovation in almost every field, and thanks to its continuous nature it helps us facilitate our daily activities. However, rules and regulations form one of the fields not yet affected by the digital revolution, as the research on this area has been limited.

In the past few years, the movement of "Rule as Code" (RaC) has emerged, which aims to create and publish regulations, legislation and policies in a form that is not only readable by legal experts but also by people with no legal background and, even more importantly, by machines. The approach involves creating legal rules that are better suited for digital service delivery, creating software tools to (re)write the rules into code, and then using that code as a basis for service delivery and decision-making.

By rewriting long and complex regulations into logical machine-readable code, decision-making processes will be more efficient. The idea of Rules as Code is particularly well-suited to yes/no and if-this-then-that decisions, which often occur in situations where eligibility needs to be determined, e.g. for vacation days or obligations to pay tax.

With governments coming up against large tech companies in courtrooms, it is clear that neither policies nor processes have kept up with tech. Law predates software, but the legal industry of the future ought to be compatible with a world that is increasingly being run on software and code.

DigiLaw has taken the General Data Protection Regulation (GDPR) as a starting point for the implementation of Rules as Code. However, the business model of DigiLaw is created in such a way that it can grow towards generalization and implementation of other rules and regulations as well. Thus, the end goal is to bring innovation for governments, also regarding rules and regulations, using the concept of Rules as Code.

Acknowledgments

- Keegan McBride - Team mentor
- Calum Cameron - Pitch trainer
- Ilja Šmorgun - Figma coach
- Markko Liutkevičius - Coach
- Eric Jackson - Coach
- Pirko Konsa - Business mentor
- Silvia Lips - Lawyer/other team mentor
- James Mohun - OECD Policy research and advice
- Alex Roberts - OECD Observatory of Public Sector Innovation
- Peeter P. Motskula - Lawyer introduced by Pirko Konsa

2. Problem and solution

The case

Information and communication technologies have contributed to the achievement of governance goals, such as improving government processes, connecting citizens, and building external interactions, in the form of so-called 'e-governance' [1]. The increasing presence of e-governance is especially prevalent in Estonia [2]. However, even though most of the governmental issues are fundamentally built upon rules and regulations, these have seen very little innovation so far. Rules are still created by human forces, which makes them less compatible with the growing number of digital applications in the field of (e-)governance. A relatively recent response to this lack of innovation regarding rules is formed by the concept of Rules as Code (RaC), which has been explored for this case. Rules as Code means translating the complex human language of regulations into logical code that can easily be checked by machines.

Even though some countries such as New Zealand [3], France [4], Australia and Singapore [5] have started to test the Rules as Code concept by creating tools to write regulations into code, we are still far from using it in our daily life. The goal is to be able to use such code for service delivery and easier decision-making. To make that happen, the (market) potential of Rules as Code should be demonstrated with a strong use case. This will support the growth of the Rules as Code movement not only from a business perspective but also from a(n) (e-)governance point of view.

The case was provided by Dr. Keegan McBride, GovAiLab Lab Manager and Research Fellow at the School of Information Technologies, Information Systems Research Group, TALTECH.

User problem and societal challenge

The introduction of laws and regulations is a long and complex process that requires many steps before actually being enforced. Meanwhile the speed rate at which the technology is entering in our lives is constantly increasing, making almost impossible for the actual legal infrastructure to keep up with the increasing digitalization.

This discrepancy can lead software developers to implement rules that are not meant to be applied in the world we are living in today. Moreover, it is not seldom the case that developers need to interpret laws by themselves due to the lack of resources to hire a lawyer, leading to wrong implementations and inconsistency among similar software. This problem is being enlarged as e-governance is becoming more prevalent around the world, especially in European countries such as Estonia. The digitization of governance means that the incongruency between the law and digital data is shown all the time instead of being a one-time case.

A great example of the aforementioned situation is the coming into force of the European "General Data Protection Regulation" (GDPR) in 2018. The regulation was born to substitute the "1995 Data Protection Directive" in protecting the personal data and privacy of the EU citizens [6]. However, even though it was thought to keep up with the ever growing digitalized world, it is still written in natural language leading to many misinterpretations and ambiguity that make its implementation challenging. In fact, in the last two years of GDPR enforcement, all kinds of businesses have faced a total amount of €176 million in fines [7]. Even big companies like Google [8] are part of this group, although they can afford very good lawyers who can interpret the GDPR in the best possible way.

Given that big companies, with plenty of resources, have suffered from large fines based on lack of compliance with these new privacy regulations, one can only imagine the problems that start-ups and other small to medium-sized businesses (SMBs) encounter. Moreover, the GDPR includes only a small branch of the existing laws that people or companies have to comply with. So, even though our solution is meant to be applied to all regulations, we decided to start off by focusing on one of the most urgent and struggling regulations for companies handling personal data in Europe: the GDPR.

The solution

Given the case, our solution is naturally based on Rules as Code. As a starting point, we have taken the GDPR, for which the general idea was to create a tool that automatically tests a company's software or application compliance and provides them with useful and easy to understand feedback on how to improve their data processing. Using code, based on written law, our software can automatically check any system for law compliance and tell you what you would need to change and how. Using the short time available, we have built an MVP to show what we can do [9]. We started with the implementation of one specific article of the GDPR, article 9 [10].

For our MVP we have translated the many conditions listed in the article into logical code that, through appropriate inputs, can understand if a system is compliant or not with the specific article. In this first stage these inputs are given by the user through simplified checkboxes that the customer can use to indicate the situation of their company to us (see Figure 1).

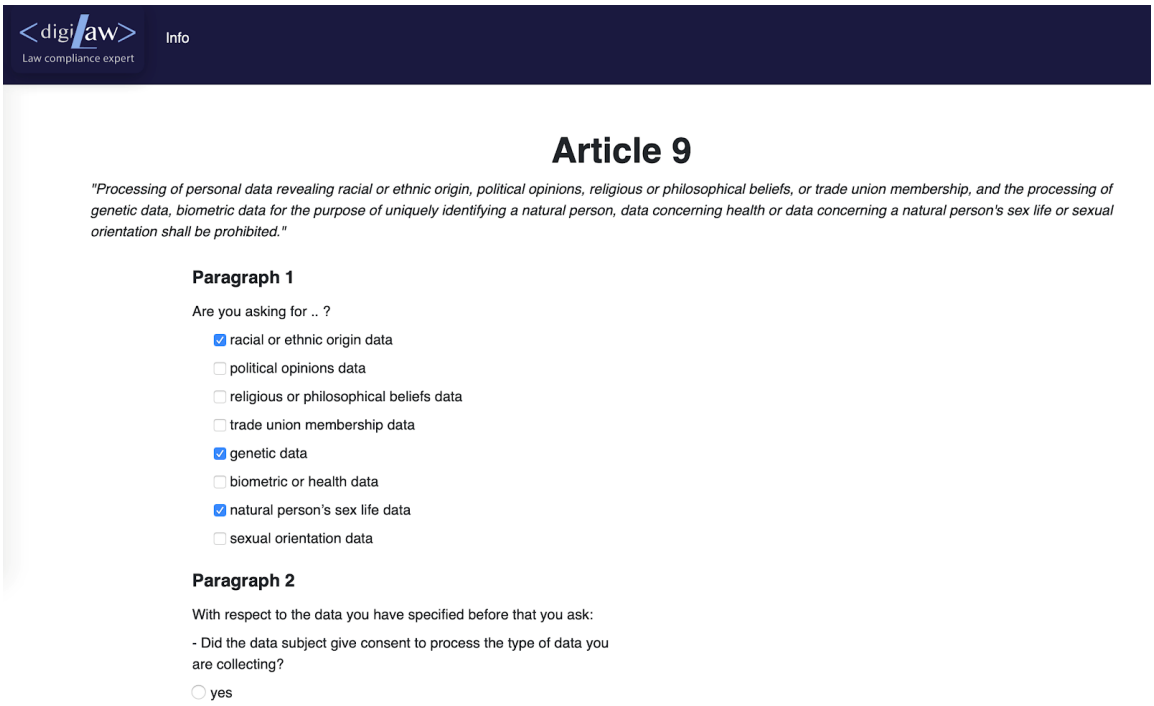

Figure 1: MVP user input through checkboxes

Based on this input, our system will check whether the company complies with the rules written in the article. Feedback is then given, which shows where problems occur and how to solve them, as illustrated in Figure 2.

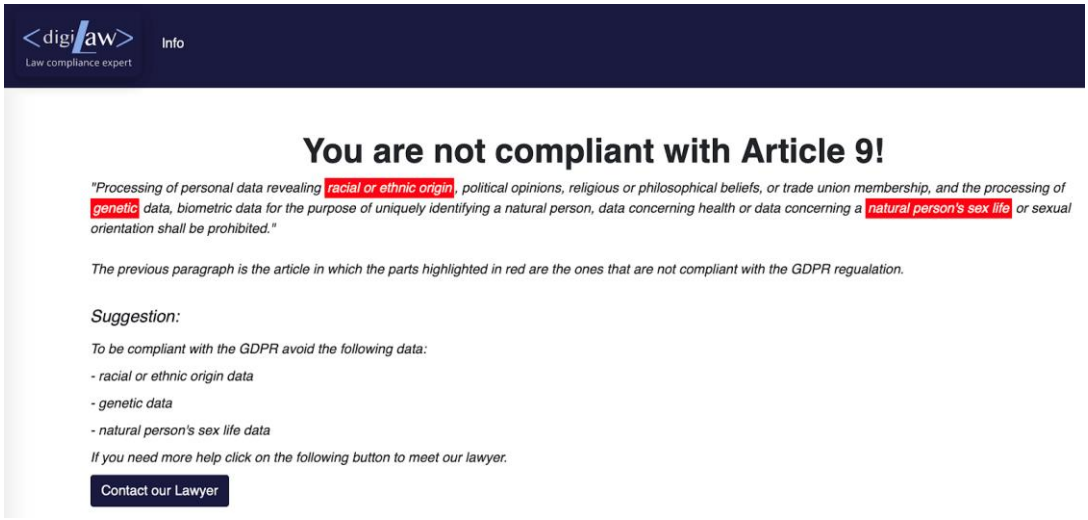

Figure 2: MVP feedback page

This MVP still requires quite some manual input from the user. However, the aim is for our software to require as minimal input as possible such that our tool takes away the burden of the complexity of dealing with all these laws and regulations. One of the final goals for this service is to automate the process of retrieval of the inputs, such that the process can be simplified even more for the customers.

Nature of innovation

Rules as Code is a relatively new movement which disrupts the traditional legal system as we know it. For a long time, laws have been created by people, not by machines, which can make it a complex and lengthy process. At the same time, the fact that laws are written by people makes it inherently complex since everyone can and will probably interpret such written text differently. By making a translation into logical code, much can be gained in terms of complexity and efficiency in the field of law which will be beneficial for businesses, individuals and governments.

Role and impact of ICT technology

Information and communication technology can be seen as one of the main contributors to the development of e-governance. Consequently, e-governance has led to a call for digital innovation of rules and regulations which is what we have tried to solve in our case. This means that ICT technology is inherently part of our solution. In fact, our idea is to create a digital tool that automatically tests a company's software or application compliance. Using this online tool and later a piece of software, we can easily reach our clients in Europe and the rest of the world, restricting the intervention of human resources and thus increasing the role of ICT technology.

3. Business modelling and planning

3.1 Business modelling

Business model

An overview of our business model can be found in the business model canvas shown in Figure 3 below, which is followed by a more detailed description of each segment.

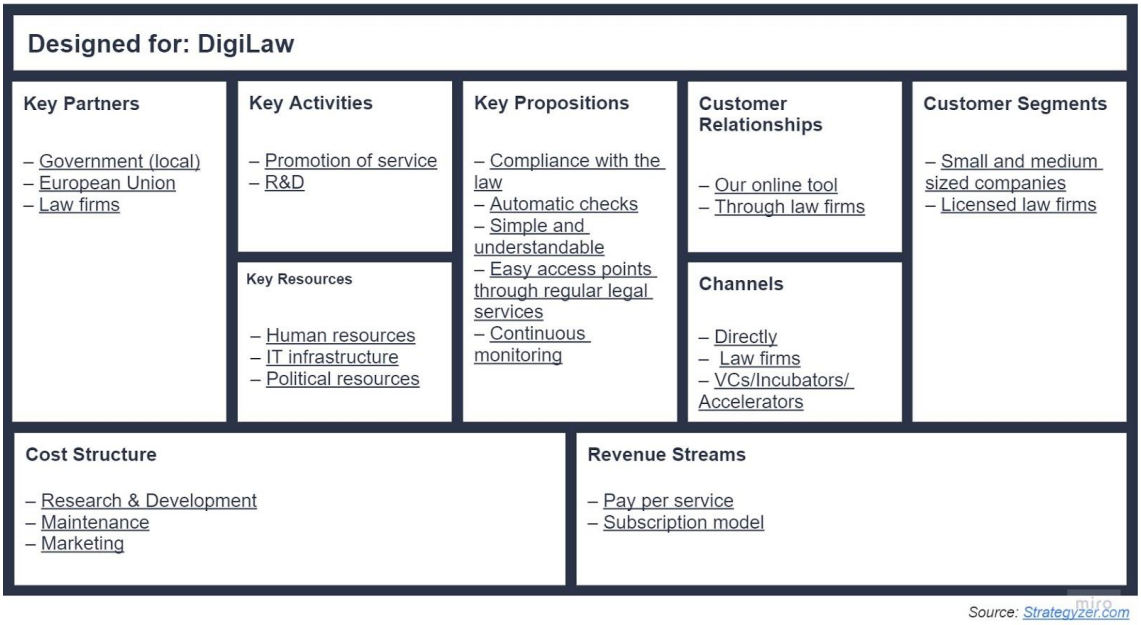

Figure 3: Business model canvas of DigiLaw

Key Partners: DigiLaw will be working together with three main partners. On one side we have law firms who can help us with the right interpretation of the law through their legal expertise. At the same time, we can refer customers to them for specific cases that cannot yet be handled by our software. This partner might also turn into a customer in the future. By purchasing a licensed version of DigiLaw, law firms could save time and therefore costs, which could help them attract a lower customer segment. Therefore, through a licensing model, we can also reach law firms' customers indirectly.

On the other side, there are governmental bodies which provide us with two different kinds of partners. The GDPR is most prevalent on a European level but it is still relevant for global businesses with connections to the EU. However, in both cases there are local rules and regulations that also need to be taken into account. Therefore, we can exchange knowledge with local governments on Rules as Code such that rules and regulations can be made more understandable. Then, to better integrate Rules as Code into daily life, the goal is to have new rules and regulations written from a Rules as Code perspective, hence making their translation into digital applications easier. For this, we want to partner with the European Union and exchange knowledge on how to create machine-readable laws and regulations from the beginning.

Key Activities: There are two main activities DigiLaw needs to focus on for a successful implementation and future sustainability. First of all, much attention will be going to Research & Development of our software and its related services. Key points will include development of the online platform, software development, and of course legislation evaluation to make sure that our software is in line with the current legislation.

Next to that, promotion of our service is a very important activity because the concept is not widely known nor has its successful implementation been validated yet. Promotion will be an important contributor to confirm DigiLaw's applicability.

Key Resources: To make all of this happen, there are three main types of resources for DigiLaw. First, we have human resources including software developers, legal experts and members with a business background to promote DigiLaw and form the required partnerships.

Next, we need IT infrastructure including servers, computers, and a high speed internet connection to be able to develop and maintain our tool.

Finally, we need political resources in order to form connections with governments and legal firms as discussed in the section on key partners.

Cost Structure: The cost structure of DigiLaw is based on three main pillars. First, Research & Development will be costly, especially in the beginning, as a lot of research will be needed given that Rules as Code is still a concept that is being developed. This cost will remain present though, as laws and regulations change over time making continuous development a necessity.

Also, costs will occur from the need for our tool's sustainability, meaning data storage and web maintenance.

Furthermore, costs will come from marketing. As mentioned before, considerable marketing efforts will be needed since Rules as Code is a relatively new concept, but also because regulations do not play a big role in the private sector yet. Therefore, it might be good to invest in a collaboration with a big international company that can serve as a role model. Related to this, we will need to invest money in customer services to maintain a good relationship with our existing customers.

Revenue Streams: DigiLaw will be offering two different revenue models. Mostly, we offer a monthly subscription model for businesses (€100 p/m) as this fits with the continuous nature of our service, namely the continuous monitoring of our client's system throughout its lifecycle.

However, as we are aiming at smaller businesses, including start-ups, who might try to avoid many subscription costs, we will also offer a pay-per-service option (€150). Using this option, customers can ask for a one time test of their system or a specific part of the regulation they are dealing with.

Key Propositions: The strength of DigiLaw is based on five key propositions. First of all, we offer easy compliance with the law which means that companies can reduce their risk of getting (big) fines.

Next to that, for the GDPR we offer a simple to use tool based on APIs for automatic checks. Once the connection is made, our customers can constantly check their systems without the need of any interaction. Meanwhile, for the other regulations we are projecting tools that require a little effort to use, which means that only a few clicks are needed for our clients to find out the status of their business and how they can improve it.

Also, as we are translating the complex laws into logical code, dealing with regulations becomes simpler and more understandable since no more legal jargon is being used (from the customer's perspective at least).

Moreover, customers can make sure they are always up to date when using our subscription option as this provides them with constant monitoring of their system.

Finally, as we partner with law firms, which is a place customers might go first when struggling

with rules and regulations (but often above the budget of our target group), there is an easy access point to our service through these regular legal services.

Customer Relationships: As mentioned before, one of the forms of interaction with our customers will be through law firms. Since we work together with them and probably refer clients to each other, the point of contact with our customers can sometimes move to these firms.

Still, the main interaction with our customers occurs through our online tool where customers subscribe and provide the necessary information such that our software can give feedback on their system.

Channels: We will be reaching our customers directly through our online tool, but there are also a few more indirect, so called 'partner channels'.

One of these partner channels is that of VCs/incubators/accelerators. They often come across start-ups and other SMBs which are exactly our target group. Therefore, marketing through them would be a good opportunity.

Another partner channel is formed by law firms, as priorly mentioned.

Customer Segments: Our main customer segment is formed by SMBs. These customers are business owners who often get lost in the forest of regulations but do not have enough resources (yet) to hire a lawyer to take care of it. This often means they put off legal issues at the risk of getting fined, which means our service at an affordable price can be very valuable for them.

Governments and law firms are our partners at this moment, but they might also be potential future customers as we grow to become the market leader in Rules as Code.

Industry value chain

When it comes to creating our tool, the first steps have already been taken by creating an MVP. This first MVP, which can be found at www.digilaw.technology, is a basic translation from article 9 of the GDPR into code. Using the checkboxes on the online webpage, the rules have been structured and translated into a format that is more understandable for the user. Based on the user's input, feedback will be given on the user's compliance and how to improve it if needed. This MVP can be used to do a round of user testing to gather feedback and find out where or how to improve our tool moving forward.

For the next milestone, in 6 months, the goal is to have our software automatically checking our customers' system based on specific points that we have identified in the existing rules as being indicators of compliance. For this, a better understanding of the rules as they are will be needed, such that manual input from the user is no longer required. From a technological point of view, a specific software will be developed which will provide APIs that are able to carry out such automatic checks. This process will be feasible through a black-box testing tool consisting of providing all the possible data inputs and then checking how the data will be handled after it is processed by the backend and whether it is shared with third parties. By achieving this milestone, we can add value through our key propositions of automatic checks and continuous monitoring.

Another way to add value for our customers is to deliver the key proposition of being up to date with the laws. As rules are naturally subject to change, we want our software to be able to learn from different versions of the rules as well as different sorts of software it encounters. For this, we can use artificial intelligence. Furthermore, using natural language processing, our tool can identify the relevant elements of the law and learn how to translate this into code. Such a self-learning system will be created after 1 year.

Finally, after 2 years, we will expand to other rules and regulations outside of the GDPR, such as taxes and welfare. Rules as Code is not only applicable to the GDPR but to many other regulations as well.

When our tool is compatible with all these different rules, we can add value for many more customers. This does mean that we are going to develop our tool in such a way that it will be compatible with the majority of the cases. For example, once the automatic testing tool for the GDPR will be finalized, we will be able to reach customers in other countries enforcing other kinds of data protection regulations, by simply processing the new regulation with our Natural Language Processor and then changing the RaC inside our automatic testing tool. The same principle can be applied further in other fields like finance, welfare, etc. Thus, there will be a generalized tool for each field and for each country so that the RaC inside the tool will be different to comply with the regulations in force. Throughout this envisioned chain of action, we will be building up our Rules as Code tool from the beginning, allowing us to become the market leader and expand to other relevant markets over time.

Market segments

Our main target group is that of SMBs. Only within Europe, there are already 25.1 million [11] of such businesses. Reaching this great number of customers at our initial stage is not realistic, hence we are aiming at a segment of it with the goal of expanding in the future.

Moreover, as we will see in the next section, there are some competitors who can take away part of our market. However, we strongly believe that these 25.1 million businesses provide an interesting market potential. We know that €176 million worth of fines was charged due to lack of compliance with GDPR regulation from September 2018 till date [7]. These fines can add up to 20 million Euros or 4% of annual profit of any company. This makes us an attractive player in the market as we can meet the needs of our target group, reducing the risk of such fines, at an affordable price.
Realistically, we believe that within three years we will be able to target and reach 0.15% of this market formed by SMBs.

Competition

Despite the fact that DigiLaw is part of a new technological movement, it has competitors that offer non technological solutions to the problem we are trying to solve or partial tech solutions.

Law firms: The most obvious competition is formed by existing law firms. As for the GDPR but also other legal regulations, many law firms offer their services to companies or organizations who feel like they lack the knowledge or time (or other resources) to implement such a regulation correctly. These law firms target mostly larger companies though, who have the money for such legal advice, as their service can come at a cost of £385 already for just a 30 minute consultation [12].

Other GDPR compliance software: There are already some online solutions for GDPR compliance out there. However, often these solutions focus on one specific aspect of GDPR compliance such as encryption of data, asking for consent, or checking your cookie implementation [13].

Still, there are a few competitors offering more complete solutions. One of them is SECURITI.ai [14] who we believe to be a strong competitor as they also focus on automation and taking away this burden of checking GDPR compliance from the customer. However, they have a strong focus on privacy regulations, while we aim to expand, and they target the American market, while we want to focus more on the European market (at least initially). Another difference is of course that we are building our solution from a Rules as Code perspective, whereas they base their solution on Artificial Intelligence.

Another competitor in the field is RedHat, who offer an automation tool for GDPR compliance [15]. However, to implement their solution it seems that some technical knowledge is required from the client, which might be lacking from a business owner or which should be spent on keeping their own business running instead of dealing with legal regulations. For this reason, we are trying instead to provide our tools with an easy interface that could be used not only for the GDPR compliance but also for

other sectors like taxes, finance, welfare and many others.

The last main competitor is OneTrust, who seem to be very similar to SECURITI.ai. They are more extensive though, as they offer solutions for more different privacy regulations and have established their trust with companies all over the world. Still, they are limited to the privacy regulations and do not use the Rules as Code principle whereas we are aiming to establish Rules as Code as a principle used for compliance with all kinds of rules and regulations. Moreover, our use of NLP to keep up to date with the changing laws automatically could provide us with an extra competitive advantage. Overall, our solution seems to be more sustainable as we are using the innovation of Rules as Code to change the field of rules and regulations as a whole.

Governments: Finally, the government could be a competitor if they were to provide clearer and more information to companies and/or organizations, reducing the amount of problems companies now face when trying to comply with the rules. However, at the moment, the help given by the government is not so effective as it usually consists of web pages with long texts and many links to even more textual documents [16]. As Rules as Code gets rid of these long texts and human interpretation it would be a good solution. As mentioned before, it would of course be best to turn governments from a competitor into a partner to improve the effectiveness and efficiency of our Rules as Code platform.

Market potential

As we have seen before, there are 25.1 million SMBs in Europe alone. Taking into account that most of our competitors focus on the American market, it is plausible to assume that our market potential is formed by the European market. This market will be divided into different kinds of customers though, as not all of them will be able to afford a subscription and will therefore only purchase a one-time check of their system. We assume that 20% of our market will use the pay-per-service option at a price of €150. The other 80% will then use the subscription option.
The market potential on a yearly basis is summarized in Table 1 below.

Revenue model	*Price per year*	*Number of customers*	*Total revenue*
Pay-per service	150	5,020,000	753,000,000
Subscription	1200	20,080,000	24,096,000,000
Total	-	**25,100,000**	**24,849,000,000**

Table 1: Yearly market potential of DigiLaw in euros

Clearly, DigiLaw will not be able to reach every single customer on the market. Moreover, the number of customers will grow over time. Still, the numbers given above indicate the potential value of our targeted market.

Competitive advantage

As DigiLaw is seeking the movement of Rules as Code, it brings its advantages and benefits, thus making complex regulations simpler and reducing the average time a lawsuit can take if not preventing it. Making the rules easier to understand will also allow more and more companies to comply with various regulations thanks to the reduced effort required to do so.

Unlike our competitors, focusing on the RaC principle we can guarantee that our services will be always up to date due to our capability of translating rules into code in a really short period. Moreover, by partnering with governments, we can drive them to issue the regulations in such a way that they are easy to translate and interpret. All these factors can increase the quality of our service in order to provide the best solution possible to our customers, even to get to a point where we can guarantee complete compliance with the regulations we are addressing.

Ethical, societal, and sustainability considerations

Rules and regulations are a fundamental part of every society. Therefore, DigiLaw is a tool that is aimed at both the private and public sector. Initially, it is aimed at SMBs but its approach to automation through AI and NLP makes it a potential tool for digital governments as well.
By working together with governments, both locally and on a European level, we can introduce Rules as Code from the core of legislation. In this way, we can not only help our direct customers but all members of society by creating a more efficient and understandable legal system. The fact that laws are the core of society's organisation combined with its tendency towards digitization, make DigiLaw a sustainable tool that can help many people now and in the future.

At the same time, its dedication to improving legal implementation and understanding from all involved parties gives it a highly ethical aspect. If laws are written to be understood by machines, they will be less prone to biases caused by human interpretation. Furthermore, the fact that the tool will 'learn' from human behaviour minimises the gap between errors caused by human behaviour and errors caused by the lack of human understanding. It should be noted though that some regulations, such as the GDPR, might require our software to review sensitive data or information that people or businesses are hesitant to share. To maintain ethical standards, much attention will be paid to the security of our online tool and related services. Moreover, as was explained earlier, our software is created based on a black box principle which means that it does not have to see a company’s data as long as it can analyse its corresponding behaviour to check for law compliance.

3.2 Business planning

Global market trends

Currently, the market does not have an established approach to the concept of 'Rules as Code'. The countries that have implemented some solution in this field, like Australia [17] and France [18], have done so in a subtle way by keeping the human aspect very involved.

Market access approach

As a starting point, DigiLaw will focus on compliance with the GDPR. The GDPR is a relatively newly introduced set of regulations. It is still causing implementation difficulties to companies, especially smaller businesses that do not have a legal department to deal with such new regulations. In the current market, there are some technical solutions that focus on the front-end check of the business websites but the main focus is on hiring lawyers to comply with the new rules.

We enter the market with the innovative service of Rules as Code that is aimed at easier compliance with laws in general. This perspective of a tool that can take over the burden of law compliance not only now but also for future law changes makes us an interesting and sustainable option. Hence, DigiLaw approaches the market by starting with a potential solution to a new and very important problem. The GDPR has been on the spotlight since its introduction in 2018 and is still equally important

today. So, introducing the concept of Rules as Code to the market through a well-known problem opens many possibilities not only for the product's success but for its evolution in the future as well.

IPR aspects

Since DigiLaw wants to improve the compliance of the people and businesses with the regulations in force, it has to understand and implement every shade of the laws in order to be able to translate them into code and include every possible scenario. Hence, DigiLaw's software will be protected under copyright law. The concept of 'Rules as Code' is a concept that everyone can apply but the software we are developing will be protected. At the same time, the website that is planned to represent the final version of DigiLaw will be copyrighted. In more detail, the copyright will cover the website implementation and use of NLP and AI to interpret laws into code. Also, we are trademarking the name 'DigiLaw' and its logo.

In the future, we also plan to license DigiLaw to law firms. It is a tool that can minimise their initial work and a license allows us to expand the use of our software while protecting it.

Financial forecast

As we have seen before, there are 25.1 million SMBs in Europe only. Our main (initial) focus will be on the European market and we expect to reach 0.15% of this market within 3 years. Looking at the subscription model, this means that we will have 37.650 businesses paying us 100 euro per month, resulting in a yearly revenue of 45 million euros. However, we do not only offer subscriptions, we also offer a pay-per-service option as this is more fitting for some of our customers. We assume that 20% of our customers will purchase a one-time test while the other 80% buys a subscription. This leads to the total yearly revenue as presented in Table 2 below.

Of course, DigiLaw will also be dealing with different kinds of costs. One of the main costs is that of R&D, which will be based on the expected yearly revenue [19]. Especially in the first years, much attention should be paid to R&D as there is still a lot to be explored surrounding the RaC concept and its implementation in our software. Therefore, we assume R&D costs to be worth 30% of the yearly revenue for 2020 and 2021, 25% of the yearly revenue for 2022 and 2023, and 20% of the yearly revenue for 2024. It should be noted that the numbers for 2020 only cover the final three months from September till December.

When it comes to human resources, we will be starting with our own team of 6, but we will also require at least 2 legal experts and 2 programmers for a good kick-start. This means that the division of employees is 80% Information Technology Specialists and 20% legal experts, which we will maintain as an assumption for the next years. A yearly salary of €35,000 for Information Technology Specialists [20] and €100,000 for legal experts [21] is assumed. However, as we are a start-up that is just starting, employees will not be paid in the first three months of business. Ultimately, we assume a growth in human resources of 10 employees per quartile.

The final two cost pillars are formed by maintenance [22] and marketing [23], which are both based on the expected yearly revenue. However, in 2020 we will still be working on our MVP which means that maintenance will not require any costs yet. As there is no revenue yet in 2020, the marketing costs have been based on the expected revenue of 2021.

The total amount of costs as well as the expected profit per year are presented at the bottom of Table 2.

	2020	2021	2022	2023	2024
Market share	0%	0.05%	0.1%	0.15%	0.2%
Number of customers	0	12,550	25,100	37,650	50,200
Revenue subscriptions	0	12,048,000	24,096,000	36,144,000	48,192,000
Revenue pay-per-service	0	376,500	753,000	1,129,500	1,506,000
Total revenue	**0**	**12,424,500**	**24,849,000**	**37,273,500**	**49,698,000**
Costs R&D	931,838	3,727,350	6,212,250	9,318,375	9,939,600
Costs human resources	0	2,400,000	4,320,000	6,240,000	8,160,000
Costs maintenance	0	1,863,675	3,727,350	5,591,025	7,454,700
Costs marketing	353,419	1,413,675	3,277,350	5,141,025	7,004,700
Total costs	**1,285,257**	**9,404,700**	**17,536,950**	**26,290,425**	**32,559,000**
Profit	**-1,285,257**	**3,019,800**	**7,312,050**	**10,983,075**	**17,139,000**

Table 2: Financial forecast from 2020-2024 (in euros)

Financial / social return

The financial forecast given above illustrates the financial return for DigiLaw as a business. However, there are more parties involved who will also experience a financial or social return from the activities carried out by us. By partnering with governments we can become part of the Rules as Code movement from within, as we assist governments with the writing of new laws and regulations from a Rules as Code perspective. In this way, the efficiency in the process of creating laws and checking law compliance can be increased, which can save governments a lot of time and thus money.

At the same time, laws and other regulations will become clearer and more understandable for everyone. For our customers especially, focus can now be put on their core business again instead of using their time and money to avoid fines. Therefore, this return will probably also be experienced on a societal level as life, both for business people as well as for people in general, will become less focused on legal bureaucracy. Overall, DigiLaw's introduction of Rules as Code into daily life allows for further

digitalization and improvement of e-governance.

Contingency planning and risk assessment

DigiLaw's end goal is to create a fully automated tool that not only tests the given systems but is able to interpret the complex human language such that it can be translated into code. However, given that the current technology necessary to implement this idea is still at its prime, the initial approach is manual, to avoid complications with the correctness of the legal approach and the technical implementation. The second step is an automatic test while the third one is implementation of AI and NLP in the tool's functionality. Despite that, the manual approach can be successfully used to cover the initial stage, until the proper automatic technology has been established. At the same time, it will collect data on human behaviour, to be used in the third stage. Also, the tool's timeline is such that it gives space to pivot when or where necessary. Lastly, the choice of law firms as key partners, adds a back up to the validation of the tool's approach to the problem it is solving.

Strategy for funding

In this first stage we have achieved our first MVP through a self-founding strategy, which was a good choice for two main reasons: first of all we have had the possibility to test our ride without the pressure of investors and secondly we did not give up any control over the company. Of course, this strategy also has the downside that we do not have other investors who may be helpful strategically, or for future financing rounds.

Subsequently, in order to enter the market, we will look for angel investors or venture capitalists that like to work through an equity agreement where they get part of the ownership of the organisation in exchange for the amount of money we need to start the business (€250K). As was shown in the financial forecast, more costs will be made in the first year(s), so more of these investment rounds will follow as we proceed to build the business in the coming years. We are confident to get such investments though as our financial forecast is promising regarding our (cumulative) profit.

4. Business development process

Main decision points and directions taken

The problem/solution stage was the most important part of our project. The first problem that led us to make a fundamental decision was how to address the Rule as Code principle in order to create a valuable business. This led us to analyse who can immediately benefit from a good implementation of the RaC principle. Then, after discovering the amount of SMBs and the huge effort needed from the businesses to comply with the regulations in force, it made us realise that this was a good starting point to focus on. By digging even more in this market, we also discovered that since 2018 the GDPR enforcement faced a total of €176 million. The latter was an indicator for us that there is a valuable market where the implementation of the Rules as Code principle could be worth it.

After many internal and external validation sessions, even though there were discussions on the type of customers we were going to address, we kept the SMBs as the most valuable customers to start with. Moreover, the validation process made us pivot a little bit on the actual implementation of the Rules as Code principle and the timeline for our company in order to be able to immediately provide a valuable product to our customers and continue with our R&D process in the field of Rules as Code.

Group process

At the start, the team decided to have an initial individual brainstorming session. After that, a discussion took place, evaluating the ideas proposed, which led to the chosen idea. The main reason the idea stood out was the possibility of attracting both businesses, which could provide profit, and governments, to promote E-Governance.

When the decision was made, roles were taken by the team members in order to carry out the next steps of creating the Business Model Canvas, the implementation approach and the presentation aspect. Throughout this business modelling process and its implementation our idea was shared with different stakeholders and experts to validate it and pivot the approach where needed. Based on this validation, we felt confident enough to build our MVP and present our business planning as it was shown during our pitch (as well as in this report).

Partners, companies, professionals, experts, and entrepreneurs interacted with

During our project we had the opportunity to interact with a number of professionals that contributed to its completion.

Keegan McBride - Team mentor

Research Fellow at TalTech – Tallinn University of Technology

Keegan's contribution to our project was the most extensive. He led us to a great amount of information on the subject of the case, suggested the idea of having an interactive MVP and put us in touch with the OECD representatives. Apart from that, he has given us constant feedback on our work via Slack with very specific and understandable recommendations and has kept himself constantly updated on our progress via Zoom.

Link: https://www.linkedin.com/in/keeganmcbride/

Calum Cameron - pitch trainer

Mobilising proactivists

During the project we had the opportunity to pitch our idea and get feedback on our performance. Calum validated the path that we chose to connect with the audience and present our idea in a clear and understandable way. His advice was extremely valuable in the way our pitcher interacted with the audience and the introduction to the project's focus after initially introducing the wide case we're representing: from Rules as Code to GDPR compliance tool.

Link: https://www.linkedin.com/in/calumcameron/

Ilja Šmorgun - Figma coach

Associate Professor of Interaction Design at Tallinn University

Figma was a tool none of our members had experience with, so Ilja's interpretation of the first version of the prototype led us to pivot our approach. From an introduction of the MVP through Figma, we decided to use it as a tool to envision the final version of DigiLaw and make a coded version of the MVP with more functionalities.

Link: https://www.linkedin.com/in/iljasmorgun/

Markko Liutkevičius & Eric Jackson - Coaches

Chief Information Security Officer at Estonian Defence League & Co-Founder at Recovery Companion | MSc E-Governance Technologies and Services

Markko and Eric's feedback during the morning pitches helped gradually shape the presentation and led to its final version.

Link: https://www.linkedin.com/in/markko-liutkevi%C4%8Dius-090b2228/
Link: https://www.linkedin.com/in/eric-jackson24/

Pirko Konsa - Business mentor

Chief Executive Officer at Modern Mobility

Pirko evaluated our Business Model and strongly suggested we contact a lawyer, with whom he put us in contact with (Peeter P. Motskula). He recommended the use of a specific idea to present, as the area we were working with was very expanded. This helped us to identify the GDPR as a starting point for our tool.

Link: https://www.linkedin.com/in/pirko-konsa-7538221/

Silvia Lips - Lawyer/other team mentor

Researcher at TalTech University

Silvia's legal expertise helped us to validate the implementation potential of our idea and open the possibility of seeing lawyers and law firms as partners instead of just competitors or legal experts for our team.

Link: https://www.linkedin.com/in/silvia-lips-b32057b/

James Mohun & Alex Roberts - Organisation for Economic Co-operation and Development

Master of Public Policy, Sciences Po, Paris | Emile-Boutmy Scholar | Public Policy Analyst | Consultant @ OPSI, OECD & Deputy Head of the Observatory of Public Sector Innovation (OPSI) at the OECD

Link:https://www.linkedin.com/in/jamesmohun/
Link: https://www.linkedin.com/in/alexkroberts/

James and Alex helped us with the first external validation of our idea. They considered the choice of GDPR as a start point useful to show the market potential. Also, they introduced us to the already running "Rules as Code" projects in other countries, which helped shape our approach to the problem and potential solution.

Peeter P. Motskula – Lawyer

Attorney at TRINITI

Peeter validated our concerns about the difficulty of implementation of the project without a lawyer in the team to guide with the existence of the human factor in the legal system. He also pointed out the different formats of software that we would have to work with.

Link: https://www.linkedin.com/in/ppmotskula/

Decision-making process

The project's decisions were made in three stages. First, team meetings would take place where ideas were discussed and the steps to take would be coordinated. After that, the appropriate mentor would be contacted. We started with Keegan to establish the case requirements and validate the idea of the project, followed by Pirko who evaluated the business plan and Silvia who evaluated the legal validity. Lastly, external interviews were set up by Keegan with the OECD and by Pirko with Peeter, which challenged and validated our thoughts and ideas.

Addressing challenges

The main problems of our project were the lack of legal expertise in our team and the difficulty of future implementation of the idea. For the first, we came into contact with two lawyers and decided to start the project with a simple GDPR regulation in order to show the validity of the idea and make it understandable for potential investors without legal background. Moreover, this challenge made it clear for us that we would need legal experts in the team to achieve our goals.

As for the implementation stage, we decided to build a functioning MVP to help interested parties envision the potential of the idea. This proved to be successful during the pitch. Still, we would be interested to test our MVP with potential customers to get a better view of our target group as well as the problems they face regarding law compliance.

Handling conflicts

Our team consisted of members from different backgrounds and expertise, including students from Cyber Security as well as Human Computer Interaction & Design. However, we found out that we had the same vision. Hence, different ideas and suggestions were presented, and the team evaluated them together, without conflict. So, when ideas were shut down it was seen as a group idea that was not in the best interest of the project, instead of an individual idea that represented the value of one team member.

In the beginning most work was done with the whole group together to establish a good basis on which we all agreed. Later, roles were divided so that some people worked on the business model, some on the pitch, and others on the prototyping. Still, there would be a daily meeting to update each other and make sure that we were all on the same page. Any misunderstandings could then easily be solved if needed. This led to a very efficient way of working which made us well-prepared for the morning pitches and eventually the final pitch.

Next steps to continue the project

After the interviews of the validation process and the pitches to our mentors, we realised that there are three main steps required to continue our project. Firstly, we would need to recruit a lawyer and programmers with experience on NLP who would like to collaborate with us.

Next, we would be looking for a 250K investment to use for the R&D stage and time to research in depth the market and any individual problems that can come up during the implementation of our idea.

However, before the above steps take place, DigiLaw is taking part in the Latitude59 conference [24] as an opportunity to get valuable feedback from potential investors and make useful connections.

5. Self-evaluation

Team organization, roles, and process

Our team was put together based on the results of the Belbin evaluation that each member had to do. According to Belbin, each member had three strong roles they could support, so in order to have all roles present in our team, members decided to take on the roles that were missing even if that was third in their evaluation. Hence, the organization was the following:

Plant (PL)	Monitor Evaluator (ME)	Specialist (SP)
Giovanni, Junhang	**Bogdan, Anisia**	**Anish**
Implementer (IMP)	Completer Finisher (CF)	Shaper (SH)
Sara, Junhang	**Sara, Bogdan**	**Anisia**
Co-ordinator (CO)	Resource Investigator (RI)	Teamworker (TW)
Junhang, Anish	**Giovanni**	

The Belbin team evaluation showed that the strength of the team relies on the fact that its members tend to think the ideas through and do extensive research to validate their implementation. This quality, however, might backfire as the team might lose track of time and fail to keep up with deadlines.
On the other side, the strongest roles of the team are of a more generic type, causing difficulties if expert knowledge is required.

With the above being said, in practise, the team took a different approach.
To begin with, the teamwork proved to be impeccable with very good communication between the members. All the opinions and ideas suggested were discussed and led to a common vision. As in every team project, different members proposed different ideas and arguments that could easily lead to disagreements. However, the team managed to always discuss and come to the common decision peacefully, without any problems that could impact the balance.

Although Belbin roles were given to each member, the workflow was very organic. Depending on the task at hand, a different team member would keep track of the process and the deadlines. While at the same time, all members would take a subtask helping in the completion of each day's goal.
In order to keep the team organised, a shared Google Drive was created to add all the materials collected and to assist in the collaborative tasks, as well as a Trello board to divide the tasks and keep track of the deadlines.

Lastly, despite the distance and the difficulties of the summer school taking place remotely, we managed to bond as a team from the first meeting and kept the communication constant via Zoom, Slack and Telegram.

Individual reflections

Anisia Spyrolari

According to the Belbin test, my strongest roles were Monitor Evaluator, Completer Finisher and Shaper. During this project, I had the opportunity to not only implement aspects of all three of these roles but of all the Belbin roles, depending on the task the team was working on.

My main contribution to the project was the creation of the Figma prototype. The prototype had three stages. Firstly, it was based on a paper sketch that was created after a team conversation. After the first feedback session, the team came to the realisation that pivoting was necessary to avoid confusion between the idea the project was presenting and the idea the customers received. The second stage was based on the implementation of the feedback, which led to an extended version of the prototype. Lastly, the final stage, required some modification so that the prototype would fit in the video presentation it would be appropriate for the person pitching over it.

Apart from the Figma prototype, I had the opportunity to contribute in the communication of the team with Silvia Lips to get feedback and contribute in the coordination of the team, a role that all the team members shared depending on the task at hand.

This Summer School project, despite its remote format managed to provide a very interesting learning experience. The case assigned to my team, Rules as Code, was a subject I had no prior knowledge on, so a lot of research was necessary to understand it and envision its applicability. In the same context, I understood the complexity of the legal system and how difficult it is to implement it without the human fact or how many obstacles the human factor might add. Apart from the theoretical knowledge, I was introduced to Figma, and had the chance to explore a tool for the first time and manage to create something out of it in such a limited time. My learning experience, however, was not limited to the content of the project. It was very interesting to work with a team you have not worked with before and can not meet in person, on a case that was assigned randomly. I had previous experience in creating a product in the form of a start-up but doing so in such a limited time helped me learn how to focus only on the important parts and make decisions like pivoting without wasting time.

Anish Kaushal

On day one, we were asked to take the Belbin test in order to know our roles and my three strongest roles were Monitor Evaluator, Coordinator and Specialist. Based on everyone's role, we were divided into teams and I took coordinator and Specialist roles. When we are working in a team, we need to take our roles according to team requirements too. I was always ready to change my role according to the team requirement.

During this summer school, I contributed to Business Model Canvas and in creation of One pager. Working on Business Model Canvas taught me different aspects to start a business in respect to customer segments and relations. Usually people get nervous when it comes to public speaking, but this summer school gave us a chance to overcome it. And I tried to participate in pitch training and it was a good experience, though it was remote pitching practice (Obviously I didn't do the final pitch).

I had no prior knowledge of law as I have never referred to / studied law and being a non-EU citizen, I had very little knowledge of GDPR. Thanks to Keegan for providing immense data related to Rules as Code (RaC), multiple websites to refer and his contacts were really helpful in order to validate our idea. Talking to different people from different fields (lawyers, developers and government officials) gave me a different perspective to think about secure e-governance. During the research period, I went through several websites which have data of fines, and it was really a huge amount. And then I realised that this is really a complex system which needs simplification for the general public and newly established organisation.
It would have been great to be in Estonia for this summer school, but coaches and coordinators of TalTech made it a completely different experience of working remotely.
Working remotely with complete new team members, in different time zones was fun. There were no clashes of thought within our dynamic team while working remotely, we always considered each other's thoughts.

Junhang Yu
As suggested from Belbin's self inspection from, I demonstrated the most of coordinator, then an implementer and a plant. While in actual practice, I found myself not always stuck to the alleged role and instead, more versatile and changing. I would sometimes shift to a monitor evaluator or a specialist, while could not always fulfil what was usually expected from a coordinator. Gradually I realised that the self inspection of mine might turn out to be the ideal role that I was imaging of myself. This mismatching between capability and imagination could in one hand reveal more of the true inner me in the process and on the other hand make me reflect on what could be improved.

As a team, we are lucky to come to a consensus that keeps the team work rolling: always ahead. This had ensured that our progress constantly kept pace with the schedule and even far ahead, leaving us plenty of time and effort to iterate and make essential alternatives. The motto had urged myself from time to time to stay in a productive status especially in such a period when remote collaboration might somehow diminish our passion at working due to lack of certain rituals and presence.

In terms of the project, I had again tasted the joy of challenging myself in a completely unfamiliar and even unconcerned area. The topic of Rule as Code was not what I intended to choose and even a field that I thought could be boring and tough. But as we kept researching and talking with our mentor, I found the field really promising. The transformation of digital society is a complex project not only involving the business but also governing. Estonia has already set up a great example to the world in establishing a unified public data storage and sharing network. And turning rules into codes so that a boost in efficiency of governance can be achieved could be seen as the next step in building the complex system. During the school days, Keegan had meanwhile introduced us abundant websites, archives and people that are actually taking part in the entire course and these helped us gradually figure out the picture even more clearly and nailed down our point of penetration, the process of GDPR compliance check for small and medium sized companies. And we were later proved to have started with a field that does demonstrate its potential even though from the jury's comment our vision was still somehow ambitious and vague.

It is surprising to learn that there's no official GDPR certification seal and only some agencies accredited by certain local authorities can issue such certification. More importantly, even after being stamped, it does not guarantee that the company is complied with GDPR because the obeying of the law is more of a procedural event rather than a state and the certification only implicates that the company is taking effort in proper data protection but still may breach the law due to either malicious or unintentional behaviour at any moment. This has raised the difficulty of system design but meanwhile left us with a huge opportunity that few people had ever touched before.

One of the reasons that I chose this summer school of e-governance in Estonia is that in the case of governing, I can possibly talk to various kinds of people from different backgrounds that I could never think of and was granted with a chance before. And the summer school did almost meet my expectations. We were lucky to be introduced to talk to lawyers, government researchers, VCs and etc. Each time chatting with these experts has pushed our project forward more or less, and meanwhile left me with insight into a new open world to discover. I do appreciate the opportunities that the summer school has provided. One interesting point worth mentioning is that working remotely has saved us considerable time of traveling. I can imagine if we were present in Tallinn and spent almost half a day back and forth through the city in order just to meet someone and had a talk. Now we did this within just a few clicks and then we could directly cut into the topic.

My contribution to the team could be separated into two major parts: ideation and implementation. I participated in the discussion and formation of the proposal and on top of each others' research and discovery, we shaped our product and business model. When we had a dispute I tried to balance and push the team to achieve an agreement. In terms of the implementation part, I make use of my advantage as a designer and designed the DigiLaw logo, and pitch slides and pitch video. Just like good marketing makes a good design even greater, a good pitch manner can lead halfway to success given an idea that is brilliant already. Based on the draft our team had agreed on, I started designing the slides from the perspective of the audience and tried to achieve a balance between visual and audio content, and make sure that all important information is properly conveyed while keeping a minimalism visual and audience's effort to read. In another sense, it is equally important to maintain appropriate mystery so that the audience's interest would be aroused and a second chance of talking with them is thus guaranteed. As suggested by Keegan, we made our website and demonstrated the URL and QR code in the pitch so that the audience can get a quick glance of our project immediately, which I assume made us stand out from the other teams. When composing the video, I spent around 2 hours typed in the subtitles and it was also proved to be welcomed by the jury.

Sara Polak

Going into the Summer School, I had learned that, according to my Belbin report, it was most likely for me to take on the role of Implementer, Completer-Finisher, or possibly Coordinator in my team. As mentioned before, we did not necessarily stick to these roles as a team, but I feel like these roles still came most naturally to me throughout the project.

Most of the time we would have fruitful discussions as a team, and I tried to look at them from the perspective of my roles. This meant that I would try to make sure that at the end of the meeting we would have a concrete list of action points to work on and that we would not discuss for too long but make any changes we needed to make and then continue, in order to be able to finish the project in time. I believe that we did this very well as a team and therefore managed to deliver good work and to deliver this on time.

Personally, I have worked mostly on building and selling our story.

First of all, this meant working out our business model in detail together with Anish such that we would have a solid basis for our start-up idea. Without any details on all different aspects of the business model it is very hard for us as a team as well as for potential investors to see whether it could actually work.

Next to that, my main focus has been on the pitch. In February, I took part in a Winter School in the Netherlands, which had a similar set-up as the Summer School, but squeezed into a weekend. During that weekend we had a lot of short pitching moments which were really helpful in building my pitching skills. Therefore, I saw the first pitching moment in week 1 of the Summer School as another interesting learning opportunity which my team members were glad to give me. This turned out to go quite well and with the useful feedback from Calum, my team members trusted me with the role of pitcher also for the

final pitch. I have learned a lot, not only with regard to public speaking but also on how to build up the content of a pitch. I sometimes struggle to effectively make my point with as few words as possible. However, for a pitch, this is essential, which forced me to have a look at the pitching text again and again. It proved to be very useful though because at the end of the week our pitch had been complimented by many people including the coaches present at the morning pitches throughout the week, other participants of the summer school, and our own mentor Keegan. Ultimately, our work on the pitch was awarded with a first place from the jury at the end pitch, which was a very nice validation of our work. It has been a very valuable learning experience which I will continue to use in the rest of my studies and my future work.

Finally, I have taken on my Coordinator role during the writing of this report. We were all writing little bits and pieces, but some organisation was needed to bring it all together. I happily took on this role to make sure that we can deliver something that we are just as proud of as we were of our pitch.

When it comes to competences I was lacking for this Summer School project, this would mostly include technical skills needed for implementation of the solution. However, I have learned in my first year of the EIT Master School as well as in these 2 weeks of Summer School that nobody can do it all. It is actually a good thing to all have your own expertise and not all be technical experts because that would give us a potentially great solution but most likely no business model to pitch.

Another thing which I did not feel as strong with was the financial side of building a start-up. It was sometimes hard to find the right numbers that apply to our business, especially as we were doing something new, which can make it hard to validate it in monetary terms. I hope to learn more about this in the future and become better on the financial side.

Overall, the Summer School was an unexpected success to me, even though it was sometimes tiring to deal with the online format. It turned out that the Belbin roles were a great way to put together our team as I have seriously enjoyed working together with them and I am proud that we managed to pull off a great project (on a topic that we were initially not so excited about).

Giovanni Valcarenghi

I'm an IT enthusiastic student seeking new experiences to improve my personal skills. I am passionate about developing IT projects - from the very first, abstract idea which starts it all, up to defining the most appropriate development path, and making it come true.
Thanks to my studies and my past experiences I am capable to work on my own initiative with good organisation abilities.
During this period and thanks to this summer school I also improved my problem solving and teamwork skills. I always have a positive attitude and I work hard to achieve the required goal.

As the Belbin evaluation has shown I'm mostly a Plant type so everything that concerns more the creativity and free thinking mindset. Another role that I have covered is the Resource Investigator, that recalls the characteristics that I feel more, such as: outgoing, enthusiastic, communicative. Overall I think I have covered these two roles in the team, however it's difficult to state that these were the only two types of roles, because I think that most of the time a person covers a mixture of more different roles.

With this summer school I have faced a really exciting challenge that I have never heard about: Rule as Code.
The possibility to deepen the field of the transformation of rules and laws into code has been a great opportunity to widen my knowledge about Digital Transformation on the Governance part. In particular I was more concentrated in the creation of the MVP. Thanks to my knowledge in creating websites and API, I was able to set up a working prototype of what we want to show in just few days. Of course the

model is just a limited example of what this project could be, but I think it helps to define and show to investors our potential as a team.
On the whole I'm really happy to have joined this summer school and to have met great people such my team and all the people involved in this experience.

Vasile Adrian Bogdan Pop
The first time the Belbin's team roles were explained to us, I was a bit sceptical. I never thought that you could actually build a team that gets along well. In fact, even though not every Team Role was covered by the components of our team, by knowing the prevailing roles of each team members, we were always able to agree on every step of the project.
According to the Belbin report, I have two well-defined team roles: "Completer Finisher" and "Monitor Evaluator" that I think fitted me well during this Summer School. In fact I was always worried about our idea trying to analyse what are the weak points of our idea and how we can overcome them, also by proposing disruptive solutions. Moreover, independently on what we were working on, I always paid attention to details, in order to reach great results.
Due to my mostly technical background, I was in charge of figuring out the feasibility of our idea by planning the needs and the next steps to reach our goal by a technical point of view. This gave me the possibility to design and better understand what a real implementation of the Rules as Code principle was, which was something I never faced before.

The technical aspects of Rules as Code were not the only ones that I faced in this Summer School, indeed, since a lawyer was missing in our team we were also in charge of his duties. One of these was to translate the Article 9 of the General Data Protection Regulation into questions in order to be able to provide a MVP that could better give the idea of RaC. Completing this task made me understand not only how the GDPR is structured and how it can be applied but also the actual difficulties of implementing such an idea from a legal point of view, due to its various possible interpretations. In fact, one of the advice we always received during our meetings with people external from the team was to include a lawyer in our team as soon as possible.

Another great opportunity for me was the one of pitching. Since I am quite an introverted person I have always avoided any possibility of exhibiting in front of an audience. Even that I know that it is wrong to have such fears, I was rarely able to contrast them and be more comfortable. Thanks to the fact that it was required for every member of the team to pitch at least once and thanks to the effort of the team to have a great pitch, although difficult, after my pitch I was very happy with the result.
Furthermore, the need to be so exposed during our pitches also allowed me to be more confident in explaining to the audience and the final jury all the technical concerns in order to give a clear idea of the implementation of our project.
In the end, I'm really happy with the opportunities that this Summer School gave to me. Although online interaction greatly reduces communication between individuals, I enjoyed meeting many people with different backgrounds and I will certainly look for other similar opportunities in person.

6. References

Prototype at the following link: www.digilab.technology

[1] Heeks, R. (2001). Understanding e-governance for development.

[2] 'Estonia's data exchange lets you pay your taxes in five minutes', Aug. 10, 2017. https://apolitical.co/en/solution_article/data-exchange-platform-making-estonia-leader-digital-governance (accessed Aug. 25, 2020).

[3] 'Better Rules for Government Discovery Report', *New Zealand Digital government*. https://www.digital.govt.nz/ (accessed Aug. 25, 2020).

[4] 'Mes Aides'. https://beta.gouv.fr/startups/mes-aides.html (accessed Aug. 25, 2020).

[5] 'Four things you should know about Rules as Code', *GovInsider*, Mar. 03, 2020. https://govinsider.asia/inclusive-gov/four-things-you-should-know-about-rules-as-code/ (accessed Aug. 25, 2020).

[6] 'What is GDPR, the EU's new data protection law?', *GDPR.eu*, Nov. 07, 2018. https://gdpr.eu/what-is-gdpr/ (accessed Aug. 25, 2020).

[7] '5 biggest GDPR fines so far [2020]', *Data Privacy Manager*, Aug. 18, 2020. https://dataprivacymanager.net/5-biggest-gdpr-fines-so-far-2020/ (accessed Aug. 25, 2020).

[8] J. Porter, 'Google fined €50 million for GDPR violation in France', *The Verge*, Jan. 21, 2019. https://www.theverge.com/2019/1/21/18191591/google-gdpr-fine-50-million-euros-data-consent-cnil (accessed Aug. 25, 2020).

[9] 'DigiLaw/>'. Accessed: Aug. 25, 2020. [Online]. Available: http://www.digilaw.technology/index.html.

[10] 'Art. 9 GDPR – Processing of special categories of personal data', *General Data Protection Regulation (GDPR)*. https://gdpr-info.eu/art-9-gdpr/ (accessed Aug. 25, 2020).

[11] Research & Development and Innovation by SMEs, "ANNUAL REPORT ONEUROPEAN SMEs 2018/2019", PDF file

[12] 'Our fixed price GDPR services and products | LawBite'. https://www.lawbite.co.uk/services/gdpr-services-and-products/ (accessed Aug. 25, 2020).

[13] 'Best GDPR Compliance Software 2020 | Reviews of the Most Popular Tools & Systems'. https://www.capterra.com/gdpr-compliance-software/ (accessed Aug. 25, 2020).

[14] 'Automate your enterprise for GDPR privacy regulations - SECURITI.ai'. https://securiti.ai/solutions/gdpr/ (accessed Aug. 25, 2020).

[15] 'How to support GDPR compliance with automation'. https://www.redhat.com/en/resources/gdpr-compliance-automation-ebook (accessed Aug. 25, 2020).

[16] 'How to make your business GDPR compliant', *business.gov.nl*. https://business.gov.nl/running-your-business/business-management/administration/how-to-make-your-business-gdpr-compliant/ (accessed Aug. 25, 2020).

[17] *BetterRules/example-rules-as-code*. Better Rules, 2020. Available: https://www.digital.govt.nz/dmsdocument/95-better-rules-for-government-discovery-report/html.

[18] 'OpenFisca: Mes Aides'. https://fr.openfisca.org/showcase/mesaides/ (accessed Aug. 25, 2020).

[19] RogerKay, 'What's the right amount of R&D?', *Medium*, Sep. 15, 2017. https://medium.com/@rogerkay/whats-the-right-amount-of-r-d-76bbd075ed56 (accessed Aug. 27, 2020).

[20] 'Information Technology Specialist Salary | PayScale'. https://www.payscale.com/research/US/Job=Information_Technology_Specialist/Salary (accessed Aug. 27, 2020).

[21] 'How Much Can a Lawyer Expect to Get Paid?' https://money.usnews.com/careers/best-jobs/lawyer/salary (accessed Aug. 27, 2020).

[22] U. T. Inc, 'Maintenance Statistics: Predictive & Preventive, Labor & Costs', *UpKeep*. https://www.onupkeep.com/learning/maintenance-metrics/maintenance-statistics (accessed Aug. 27, 2020).

[23] 'Marketing Budget Calculator 2020 | What to Spend on Marketing?', *Hook Agency*. https://hookagency.com/marketing-budget-calculator/ (accessed Aug. 27, 2020).

[24] 'Latitude59 is the flagship startup and tech event of the world's first digital society'. https://latitude59.ee/ (accessed Aug. 26, 2020).

End of document