The impact on Multi Business Model Innovation related to GDPR regulation.

Abstract

The GDPR regulation causes several business economic and customer service challenge to businesses in different business model ecosystems – either it is in EU, US or Japan. The increase of network based business models with many, different and flexible network partners challenge the business on meeting the requirements of EU's GDPR, California's CCPA or Japan's APPI regulative.

The paper have elected 3 different business cases showing some of the generic challenges to businesses. The cases taken out of a sample of total 11 business cases studied, show and illustrate GDPR regulative impact on business business models and discuss how the case businesses have coped with the GDPR - and whether customer contact in reality has suffered due to GDPR.

1. Introduction

To introduce the challenge of The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) [25] [26] and to be able to discuss the different impacts to businesses and their business models we begin with a short update on the regulations, which we found available in the literature.

GDPR was a regulation by which the European Parliament, the Council of the European Union and the European Commission introduced to strengthen and unify data protection for all individuals within the European Union (EU). It also addressed the export of personal data outside the EU. The primary objectives of the GDPR were to give control back to citizens and residents over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU.[1] When the GDPR toke effect, it replaced the data protection directive (officially Directive 95/46/EC)[2] from 1995. The regulation was adopted by EU on 27 April 2016 and was applied from 25 May 2018 after a two-year transition period and, unlike a directive, it did not require any enabling legislation to be passed by national governments [3].

"The GDPR regulative extended the scope of the EU data protection law to all foreign businesses processing data of EU residents. It provided a harmonization of the data protection regulations throughout the EU, thereby making it easier for non-European businesses to comply with these regulations. However, this came at the cost of a strict data protection compliance regime with severe penalties of up to 4% of worldwide turnover for businesses [4]. The Parliament's version contained however increased fines up to 5% [5] [6]

The regulation applies if the data controller (businesses that collects data from EU residents) or processor (businesses that processes data on behalf of data controller e.g. cloud service providers) or the data subject (person) is based in the EU. Furthermore the GDPR also applies to businesses based outside the European Union if they collect or process personal data of EU residents. According to the European Commission "personal data is any information relating to an individual, whether it relates to his or her private, professional or public life. This means that it is both data registered B2C, B2B and G2C. It can more specific be anything from a name, a home address, a photo, an email address, bank details, posts on social networking websites, medical information, behavior or a computer's IP address" [7].

The notice requirements remained and was expanded. They was decided also to include the retention time for personal data and contact information for data controller and data protection officer had to be provided by the businesses.

Automated individual decision-making, including profiling (Article 22) was made contestable. Citizens were given the right to question and fight decisions that affect them that have been made on a purely algorithmic basis.

In order to be able to demonstrate compliance with the GDPR, the data controller were requested to implement measures, which meet the principles of data protection by design and data protection by default. Privacy by Design and by Default (Article 25) required that **data protection measures were designed into the development of business value proposition processes** for products, services and processes of product and services [16]. Such measures **included pseudonymising personal data, by the controller, as soon as possible** (Recital 78).

It became the **responsibility** and **liability** of the data controller to implement effective measures and be able to demonstrate the compliance of processing activities even if the processing were carried out by a data processor on behalf of the controller. (Recital 74).

Data Protection Impact Assessments (Article 35) had to be conducted when specific risks occur to the rights and freedoms of data subjects. Risk assessment and mitigation was required and prior approval of the Data Protection Authorities (DPA) was required for high risks. Data Protection Officers (Articles 37–39) were requested to ensure compliance within businesses. They had to be appointed:

- for all public authorities, except for courts acting in their judicial capacity
- if the core activities of the controller or the processor consist of processing operations which, by virtue of their nature,

their scope and/or their purposes, require regular and systematic monitoring of data subjects on a large scale processing on a large scale of special categories of data pursuant to Article 9 and personal data relating to criminal convictions and offences referred to in Article 10 [8].

Page 4399 The new GDPR regulative refered also to **pseudonymisation** as a process that transforms personal data in such a way that the resulting data cannot be attributed to a specific data subject without the use of information. additional An example of pseudonymisation is encryption, which renders the original data unintelligible and the process cannot be reversed without access to the right decryption key. The GDPR requires that this additional information (such as the decryption key) be kept separately from the pseudonymised data. Pseudonymisation was recommended to reduce the risks to the concerned data subjects and also help controllers and processors to meet their data-protection obligations (Recital 28).

If the personal data was **pseudonymised with adequate internal policies and measures by the data controller**, then it was considered to be effectively anonymized, and not subject to controls and penalties of the GDPR. Example measures would include pseudonymizing the data as soon as possible (Recital 78), encrypting the data locally, keeping the decryption keys separately from the encrypted data.[9]

As can be seen some very time consuming and large adds to the workload for businesses have been decided by implementing GDPR - in this case adds of extra functions and extra costs to be carried out in businesses existing value chain functions in their business models. In this included that if not fulfilled by the businesses the following sanctions were imposed by the first GDPR implementation:

- a warning in writing in cases of first and nonintentional non-compliance regular periodic data protection audits a fine up to 10,000,000 EUR or up to 2% of the annual worldwide turnover of the preceding financial year in case of an enterprise, whichever is greater (Article 83, Paragraph 4[10])
- a fine up to 20,000,000 EUR or up to 4% of the annual worldwide turnover of the preceding financial year in case of an enterprise, whichever is greater (Article 83, Paragraph 5 & 6[10]

A right to be forgotten was replaced by a more limited right to erasure in the version of the GDPR adopted by the European Parliament in March 2014.[11][12] Article 17 provided that the data subject had the right to request erasure of personal data related to them on any one of a number of grounds including noncompliance with article 6.1 (lawfulness) that included a case (f) where the legitimate interests of the controller was overridden by the interests or fundamental rights and freedoms of the data subject which required protection of personal data.

The above mentioned GDPR requirements in other words formed new requirement to businesses "AS IS" (already operative BM's) and "TO BE" BM's (BM's under innovation). The GDPR requirements were not limited to EU but had similar regulations in other

countries like US - the California Consumer Privacy Act (CCPA) [26] to Japan's Act on the Protection of Personal Information (APPI) [27]. The CCPA takes a broader definition of what constitutes personal information than the European GDPR regulative. It is was expected to have significant effects on business models and business model innovation from targeted advertising to data brokerage. Broadly, it's defined as information that can be used to identify a specific individual. That includes not only personal identifiers like name, email address, postal address, IP address, license number, etc., but extends to biometric data, browsing history, geolocation, and more. The CCPA even includes any inferences drawn from any of the aforementioned data in the definition of personal information. It also have some different approach on who will be held accountable.

- Profit businesses that collect California residents' personal information
- Businesses that do business in the State of California, and: have annual gross revenues in excess of \$25 million:
- Businesses who receive or disclose the personal information of 50,000 or more California residents, households or devices on an annual basis
- Businesses that derive 50 percent or more of their annual revenues from selling California residents' personal information.

The penalties are different to GDPR regulative and set to be:

- Businesses that don't comply may be liable for penalties enforced by the California attorney general: up to \$2,500 per violation that isn't addressed within a 30-day window, and/or up to \$7,500 per intentional violation.

Additionally, consumers have a right of action (private claim or class action) if their personal information is compromised in a data breach, no proof of harm necessary., the ability to protect consumer data is top of mind. For businesses that is built around consumer data, consumer trust becomes a vital part of their business model.

The Japanese APPI Japan's first foray into data protection legislation came with the adoption of the Act on the Protection of Personal Information (APPI) already in 2003. APPI was one of the first data protection regulations in Asia. It received a major change in 2015 after a series of high profile data breaches shook Japan, making it clear APPI's requirements no longer met present day needs. The amended APPI came into force in 2017, one year ahead of the EU General Data Protection Regulation.

Page 4400 The update brought with it the establishment of the Personal Information Protection Commission (PPC), an independent agency that, among others, protects the rights and interests of individuals and promotes proper and effective use of personal information.

2. Business and Business Models

To discuss the above mentioned impact of GDPR, CCPA, APPI and other types of these regulations on Businesses requires an answer to the questions - what is a business today, what is a business model and how will business and business model look like in the future of GDPR.

Today, the term 'business model' is everyday and everybody's language in business, and of business model academia's. Even national governments, EU commission and US government use the term Business Model. The increased awareness of BMs [17], [18], [19], [20] have intensified the search for a generic business model language. However, with increased use and research of BM the fuzziness on how the BM really is constructed has increased even more – and is not solved.

The focus on being first with a generic and commonly accepted BM language has increased drastically in recent years [20],[21]. The emphasis on the BM's dimensions has been the topic of many academic papers and works [20][21]. Many have been focusing on the question of how many dimensions does the BM really consist of. Some propose 4, while others propose 6, 7, 9 and 12 dimensions. This raises the question to, how is a business model really constructed and will we ever be able to find the generic dimensions and construction of the BM? Further, can we distinguish one BM's construction from another BM or are they really built around the same generic dimensions? In this context we need to have some further clearance to be able to point to where will the GDPR have an impact? Does GDPR matter business wise and to the business model and following does GDPR have an impact economically and on other values of the business.

These questions therefore imply the increasing importance of thoroughly knowing and finding the dimensions of the BM. This question is also related to another question of when can we talk about a new BM

— an incremental and/or radical changes of a BM [21] and does that influence the generic construction of the BM. In other terms will GDPR influence future BMI?

The focus is therefore firstly in this paper on the dimensions and construction of any BM - although this is no longer deemed sufficient to cover the whole BM theory framework as it is just one focus of many — a fragmented part of the whole business model environment, research and discussion. Today, the focus of the BM seems to be changing towards a more holistic BM discussion taking in the BM's relations to other BMs and the BM's environment — leaving the basic BM dimensions and constructions behind. Again in other words where

will and will the GDPR influence the BM and how will it influence the relations part of BM's and relations between BM's. The focus of the Open Business Models (OBM) [22] and the innovation of BM seems to be a very important matter here – because will GDPR influence the ability for businesses to do OBM and OBMI in the future, which have had much research and business attention lately.

In an ever-changing and increasingly competitive global market, which is a result of the ongoing process of globalization and business model change, Chesbrough [22] emphasizes the need for even more OBMIs, including developing open and different businesses models. However, how can a business follow this track "without knowing" the basic construction and the data that the BM is build on? As basis of any BM discussion, we must begin by understanding deep the BM and defining our approach to a BM and the generic construction of the BM — in our sense what we call the dimensions of the BM.

In a world of increasing network based business model construction, where no business model is constructed and operate on behalf of just one business – and alone, the GDPR and responsibility of the GDPR becomes however even more complex. How can a business be responsible to data that are proposed and offered in a mixture or "cocktail" of different businesses BM's and their data - in other word what we call network based Business models.

In our study and answer to the above mentioned questions we turn to our early research from 2011, where we tried to "bridge" and document available BM frameworks from different business model researchers. We mapped these to the Business Model CUBE concept [16], adapted as an OMG standard in 2013 and tested in more than 400 profit and nonprofit based businesses. Few of these studied BM framework operats with network based business models and none of these work with a multi business model approach [28].

After a long test period, where we tested the framework, we found that The core business models 7 dimensions refers to: "How a business wants to construct and intends to operate its "main" and "essential" business related to the seven business model dimensions — value proposition, user and/or customer groups, value chain [internal functions], competence, network, relations and value formula." Further any Business Model refers to: "How a certain business model in the business is constructed and actually operates - "AS IS" BM – or/and is intended to be constructed - "TO BE" BM related to the seven dimensions — value proposition, user and/or customer, value chain [internal functions], competence, network, relations and value formula".

However, in our research, we found that most businesses do not stick strictly to their core business and how they want their Business Model to look like and be. They have in fact a variety and a mix of BM's with different value propositions, users and customers, value chains with different functions, competences, network, relations and value formulas. Especially we found that there can be very different cultures in different BM's both inside the business and in its related business (suppliers, customers e.g.) We found that one "set of BM dimensions" do not fit all business models. markets, industries, worlds - or what we call Business Model Ecosystems (BMES) [23]. These mix of dimensions — which we classify as different business models exist and coexists within the core business ---what we call BMs inside the business - but also exists and coexists outside the business. Individual BMs are not necessarily aligned strictly to the core business model and the seven dimensions. All of them have their own specific seven dimensions and this makes it very critical for a business operating with other businesses in networks based business models to be sure to fulfill the requirements of GDPR.

We argue therefore that a business's different business models cannot be explained by just one business model — "the core business model" — but would with preference be better to be explained by more and different business models — however, still each with seven generic dimensions, but each with different characteristics on one or more dimensions. That means that the implementation of GDPR will influence differently and have different impact on one BM to another, one BM dimension to another and one BMES to another. The GDPR influence on all levels of Multi Business Model Innovation (MBMI) as indicated in figure 1. How hypothesis is that we will find the same in our business cases.



Figure 1. GDPR's potential impact on MBMI.

3. Research methology and approach

The data for the paper was gathered in 2015 - 2019 on behalf of interviews, email correspondence and observations at physical meetings. Further data material was made available so the researcher could see and go through the material.

The research was established as a case research and 3 out of 11 cases is presented in this paper. The cases were elected as showing generic examples of GDPR's impact found on the basis and behalf of the 11 cases. All cases are referred to as anonymous – as we were not allowed to publish names openly.

4. Research Questions

From the above mentioned we try in this paper to answer the 3 research questions on behalf of our

empirical data collected in the case materials

Where did and will the GDPR influence the relations part of BM's and relations between BM's?

Did and will GDPR influence the ability for businesses to do OBM and OBMI?

Will the GDPR influence the generic construction of the BM and will the new GDPR influence future incremental and/or radical BMI?

7. Case - ABM - B2B - wholeseller

The ABM Business is a very large whole seller business within the building construction line of business. A B2B wholeseller that previously had a very advantaged CRM system - a very core competence in the business - that due to the new GDPR regulation are meet with a requirement of deleting personal data registration. These registration was previously used to help better customers service, improve customer meetings, timely follow up by sales people to prevent waste of time for customer, higher quality of service and information from sales and production in the business towards the customers, transfer of knowledge of the customer to new sales employee and marketing department. The business was also interested in B2B supplier information related to getting better procurement agreements. These information gave previously very large advantage and were stored in CRM and procurement system that due to the new GDPR regulation now were meet with strict regulations.

A general procedure have been send out by the business central administration and made all store business managers responsible to any leakages in data or break of the GDPR rules. However, it is very difficult to control that all employees follows the rules.

8.2. Case 2 – AMN B2C - retailer business

A B2B retailer in the pharmacy line of business was not particular aware of the new GDPR regulative. In the business they had previously register in their database system – equal to a CRM system – habits, preference and requirements of their users and customers, which help them to give

- better user and customer service
- prevent customer complaints at desk

when servicing customers during the sales process. Especially elderly people, disable people and people with specific diseases, and special needs for medicine valued from this registered knowledge at the medicine shop. AMN felt a high pressure on expeditions as number of opening hours were diminish to save cost, request on productivity especially to employees were continuously increased and user and customers were increasingly asking for more service, new and better customer service. Further, several of the users and customers were becoming more and more impatient while the employees were trying to find out what the patient should and was allowed to have **MagnedDane**. Impatient customers is a general increasing trend seen in e.g. the retail line of business and it course many

conflicts and inconvenient situations. It was therefore outmost important that the employees were well educated, well trained in customer service and well prepared on customers that were difficult to handle. Lately some episodes had occurred which had coursed unhappy and stressed employees because they were not allowed to look up or look up in the same way in their previous CRM systems.

The GDPR hereby influence the value proposition dimension – especially service dimension and value proposition process. More value chain functions have to be carried out and customer satisfaction was to some customers decreasing. The competence dimension – especially the human resource, organizational system and culture in the different business models were definitely influenced by the new GDPR regulation. The Business had use several meeting to inform and implement general GDPR procedures – which time and cost consuming.

8.3. Case 3 – ABO – G2C Research/Eduation business

A business in the research and education line of business had as a service and BMI project to try to tailor make their teaching and education environment to the students in the institution. The institution had in some cases experienced, that a smaller student group was leaving the institution more than other students group and some because they felt that they did not receive the value propositions they had expected. The institution had for some years made a competence profile mapping of each students to help form groups, help to understand better their users needs and competences. They used the competence profile system developed by a software business that hosted the data on a secure host tailor made for the purpose.

By spring 2018 these data had to be deleted and all data from previous years had to be erased due to the new GDPR regulative. The supplier was informed to take this action by the management of the ABO. This would expectedly prevented the institution to continue improvement, continuous innovation of the studies and study environment, together with preventing them from learning, measuring and following up on specific actions on a long term scale.

The GDPR regulation does not concern the processing of information that is deemed anonymous, including for statistical or research purposes. However it leaves the researchers and employees with an increase workload to secure that data are erased and old data are not filed.

9. Discussion and reflection

The new GDPR gives rise to many discussions and controversy in many businesses. All though thousands of amendments have been proposed the single set of rules and that the removal of administrative requirements were supposed to save money. We found however in our research clearly that the business had realized increasing cost due to more procedures - more value chain functions to be carried out, more technology and software necessary to be bought, more hours spend by HR to live up to the necessary GDPR requests, change in organizational procedures and structures together with implementation of new culture. Further several of the employees and managers especially were frighten about the consequences - large fines - if the GDRP procedures e.g. was not followed. Further GDRP regulation made a kind of irritation and negative motivation to be requested to do more procedures. It was felt by managers and employees like extra frictions to the business and its business models - especially on value chain function dimensions.

The biggest challenge for the business might be the implementation of the GDPR in practice – especially for the small and medium size business. The implementation of the GDPR require comprehensive changes to the businesses practice – especially for businesses that had not implemented a comparable level of privacy before the regulation.

Several of the business had a lack of privacy experts and knowledge as of today and new requirements on private data protection and handling. Therefore there were in more of the business studied a strong need for information and education in data protection and privacy rules. However many of the businesses did not have extra resources to use on this issue – although they saw it as a critical factor for meeting the new GDPR demands. Especially the level of fines was very "motivating" for the business to establish GDPR procedures and organization.

Different interpretation of the GDPR regulation inside the businesses (managers and employees) and outside the businesses (customers, neworkpartners e.g.) lead to very different levels of GDPR solutions and privacy handling.

Several other issues and challenges raises also related to the Business and Business Model perspective including the increasing amount of network based business models.

In a time perspective it is now difficult to follow a BM and BMI project with all data storage inside the business over a long time period. Of course the business can anonymize the data – but in several cases this is not appropriated and what to do with mix data from different businesses.

Value proposition perspective – especially service and process together with the user and customers became also more difficult to handle and carry out.

Customer complaints became more difficult to prevent and handle – "the knowledge" - around a user and customer can no longer be stored or and became more difficult to access.

10. Conclusion

From the above mentioned we tried to an an array of a research questions.

The findings is that there is a heavy impact

from GDPR regulative and it influence the relations part of BM's and relations between BM's, users and customers heavily. The business case we studied show that especially top management are very concerned about the impacts of breaking the new GDPR regulatives. We learnt that soon in 2020 businesses in California will meet the same strict rules and concerns – but many have not yet realized what impact it will have to their business.

The GDPR influence the ability for businesses to do OBM and OBMI, because business have to be more focused an careful on what there data and data related BM's are used for and to. Especially data merged with other businesses BM's causes extra workload and costs.

The GDPR will not influence particularly the generic construction of the BM but will influence the amount of future incremental and/or radical MBMI?

On behalf of our empirical data collected in the case materials we found that the GDPR have impact on the BM dimensions - value proposition specific user and customers service, value chain functions - increased numbers of value chain functions has to be carried out, value formula - because cost increases due to more functions and new functions have to be carried out and included in the value formula. Also the relations part - both tangible and intangible relations increases, which will and have already caused friction and slower business model operations. The relations to other BM's in some cases also increased because several businesses became responsible of suppliers and customers taking care of sticking to the regulative of GDPR. Some of the business tried to solve these increasing procedures via support of ICT.

GDPR will definitely influence the ability for businesses to do OBM and OBMI, because more business will be reluctant to open their business to other businesses – due to security issues. Also OBMI will be reduced because data cannot flow so openly as before the regulative.

The GDPR will not influence the generic construction of the BM as such but will increase the number of components in the business models dimensions. From the cases we studied it is not possible to answer the question of GDPR will influence future incremental and/or radical BMI? However it seems as if GDPR will push to more incremental BMI as radical BMI, often do not take into consideration GDPR procedures and therefor increase risk. Also it will be more difficult to access private data – especially on a long term and process based perspective.

We expect therefore on behalf of our studies that GDPR implementation probably will influence very differently one BM to another, one BM dimension to another and one BMES to another.

11. Further research

The research group intent to continue the investigation of the GDPR impact. At the moment we are investigating more cases to find out solutions to

prevent BMI to become slow and keep BMI at a high speed also in a world with GDPR. We are investigating blockchain and smart contracts possibilities to solve some of the GDPR issues mentioned.

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