

towards citizens as digital innovators

Purpose of this white paper

The purpose of this white paper is to clarify the confusion around digital information and its commercial value in the market place. It explains how the current problems should be seen as opportunities for Finland, Finnish private as well as governmental organizations. Finally we go into more detail on how two innovations, which originate from Finnish soil, can exploit these opportunities. It will give Finland a competitive edge in a wide variety of networked software, online services and cloud services.

Introduction

We know computer generated bits such as email and digital photos are not physical nor behave like a material. Sections of information in digital format (bits) can be duplicated, deleted, retrieved, altered with ease and moved around the world at lighting fast speed. At the same time this data can be stored in many locations.

The people consider bits and digital information as something that "is somewhere" like a book that is on the shelf. In our networked society where "everything is connected to everything" this is not reality and thus people act based on misconceptions.

Our laws are slowly catching up with the very different nature of digital information. Hence our culture is in a state of transition which opens the digital world to confusion, misunderstanding and exploitation.

Corporations of many kinds have understood the monetary value of this digital information and huge enterprises have been built, and are being built, solely or mainly with the purpose of selling people's and organization's information to third parties.

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Confusion

The introduction pointed out that digital information is misunderstood on the owner's side but highly valued by the aggregator. In other words the digital information may have little use for the owner, but may have critical monetary value for organizations such as Google, Facebook, Microsoft, Yahoo, Amazon who are profiting handsomely from their business practice to collect digital information from their users and selling it off to 3rd parties. This is all done legally by them under the current USA laws.

These organizations have created popular social online products where people willingly and with great enthusiasm share private and less private information. Digital information goes beyond that generated on social networks. Additional sources of digital information are Smart meters, GPS equipment in cars and phones, bonus cards and other chip cards and RFID tags. There are many data gathering devices and instruments which collect digital information on people which may be visible or not so visible to us in our lives.

It is irrelevant to most of us where this digital information is kept. The following questions arise: Who has access to your digital information? How many copies are out there? Can you ask for your data back? Who is checking how your personal data is distributed? Are there multiple copies out there or was it sold to a third party already? Has your data been used for purposes you do not like or which can harm you? How would you know? Was your digital information correct in the first place? Is incorrect information passed down through the complex system, creating problems for you?

The EU Data Protection Directive (Directive 95/46/EC) has a set of clear guidelines where data protection is seen as a subset of the human rights laws. To date the information laws in the USA are mostly ad-hoc and based on the idea that the private sector should regulate itself. The absence of civil protection laws on the ownership of digital information give the USA government full access to all digital information on all people. This makes the Finnish citizen and their digital information vulnerable to abuse. Digital information can be misused or even used against the owner of the data. Corporations operating under US law collect data from Finnish and EU citizens (companies and government). Now the question arises: Do we want this?

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Changing the law of another sovereign nation is a time consuming and cumbersome process at best. Instead I see a clear opportunity to create on Finnish soil, under EU and Finnish law a collection of services that helps citizens and companies to safeguard, manage and monetize its own digital information.

The Marketplace

A digital information service needs to meet many requirements before it can act as a safe, secure and trusted service. This will be outlined below. The computer programs, protocols and network infrastructure have to be open to scrutiny and it should be possible to improve and adapt it when new needs arise. The user of this system may need a rich Graphical User Interface or a command line driven interface to the service. There are many solutions in between. The user's needs must be carefully analyzed because different users may have very different needs.

The primary goal of such a service is to provide a secure place for people to store their digital information. In addition secure channels must be created over which digital information can be sent. As important there must be secure ways for third parties to retrieve the digital information. The most important aspect of such a system is that the citizen should have full control over what information is kept under which conditions it will be give out. The usage path should be completely transparent to the user. The key here is that the information is secured and only made available to third parties if the appropriate permission is given by the owner of the information.

As The European Union is a large economic block, we should not underestimate the willingness by earlier mentioned corporations to comply with services as suggested above. These corporations do provide meaningful services but a shift in monetization is needed for us to move to a safer digital world.

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Instead of citizens using their services for "free" we see now that this "free" digital information has a value to the collector via repackaging, combining and reselling. This is all done without the information's owner having any control over what happens to his information. The owner of the data gets no monetary compensation for the use and selling of his data. Citizens could charge third parties for the use of their information and certain data if certain digital information is deemed valuable for a third party. As you can see, there is market of offer and demand for the collecting and selling digital information.

Driving innovations

Finland is known as a safe, politically stable, non-corrupt, clean and modern society. Finland can serve as the preferred base for the ecology of secure online and networked digital information services. It can serve the EU countries and beyond. We can only begin to imagine the kind of services that can be offered. Some of the key elements were mentioned above.

An important element of such a system would be the quality of the technical and social security it offers. The services must be flexible and easily extended to counter threats from outside. This would mean the ecology of services is built in such a way that code can be easily replaced and improved upon. Protocols must be adjustable, new services added with ease and old services removed almost in real time.

Just imagine one can alter online services in real time. What would this mean for the way we use the internet? Stand still for a moment and imagine the paradigm shift we are exploring here. The system will be modular with tested, secure and validated blocks of functionality. These modular pieces are then put together into a complex, but flexible digital information system which can be managed transparently.

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This organic way of building systems with modular, secure and flexible functionality we still have to find a name for. What we are certain about is that this flexible system will enable us to create a new breed of services in real time and fast. The need for coders will diminish but instead we create a population of digital innovators and data explorers. They will have control of the data and functionality and can use their imagination to solve day to day problems. The newly enabled citizen can provide information to various parties on an "as needed" basis. This system with its tools will be hosted in Finnish owned clouds of data.

In the 1960's Denmark revolutionized the way of playing and building that captured the imagination of millions of young people with LEGO. We can capture the imagination of many, many more people by providing a flexible system through which information can be mined in real time.

In the mean time...

In recent years another important innovation has been developed on Finnish soil. This innovation is a true paradigm shift and is called: Abstraction Design Methodology. This is a way of breaking any computer code into logical "LEGO¹" like bricks. We can recombine these modular blocks of programming and create new applications based on tested, pre-existing, working and functional code. We can deploy this code on almost any platform imaginable.

During the same period a service has been developed based on the notion that people need mainly 5 words that defines their day-to-day needs:

What + Where + When + Whom + Worth

This is combined with a map and an easy to use tool to create new services, almost in real time. This service, called CALOOM (CArta + bLOOM), can serve as the base for the discovery of anything you would need in your life. But instead of creating all these services, CALOOM is an infrastructure upon which anyone can create his own application, or niche service.

¹ LEGO is a registered trademark of the LEGO company

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Now imagine what happens when an ecology of cloud services and a service such as Caloom merges with ADM? This enables people without any prior knowledge of software and protocols to solve local and less local problems by creating new ad-hoc applications. With this step taken, a completely new way of solving day-to-day problems becomes possible.

ADM and CALOOM are ready for the next steps. The innovators behind these two core innovations have teamed up and created a third innovation: ADM-Ecosystem. Together they want to establish a consortium that enables them to create a new kind of business based on these innovations in Finland. It can reach out to far beyond Finland's borders.

CALOOM

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