



# Philosophy

Open Platform

**2014-03-02**  
**(PREL ver 0.2)**

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## Index

<b>1 This document.....</b>	<b>3</b>
<b>2 Background.....</b>	<b>3</b>
2.1 Lock in effects.....	3
2.2 Interoperability.....	4
2.3 The EU-commission and Horizon 2020.....	4
2.4 Innovation is blocked by old structures.....	5
<b>3 A proposed strategy.....</b>	<b>5</b>
3.1 Open platform.....	5
3.2 Multiple channels, interfaces and suppliers.....	7
3.3 Integrity.....	7
<b>4 An example – a proposed school system.....</b>	<b>7</b>
4.1 Open Platform.....	8
4.2 Scheduling.....	8
4.3 Students view.....	8
4.4 Parents view.....	9
4.5 Administrators view.....	9
4.6 External systems.....	9
4.7 Multichannel strategy.....	9
<b>5 Proposal.....</b>	<b>10</b>



## 1 This document

Hillar Loor, the author of this document has been working with the public sector since 1998. Has been CEO for, and is now senior partner in imCode Partner AB, a swedish SME focused on ICT development for the public sector.

Mr Loor is currently also the vice chairman, and one of three initiators, of the business association Open Source Sweden.

This document contains a description of his opinion on some of the biggest challenges in the development of efficient ICT-systems for the public sector.

It also indicates a philosophy for a possible way to handle and develop efficient ERP (Enterprise Resource Planning) / Business systems, something that has been neglected for quite a while, at least in the parts of the public sector he experience from.

## 2 Background

When asked about their biggest problems with vendors/suppliers within the ICT-area, many Swedish municipalities point out a limited number of factors that prevent and slow down development speed and create unnecessarily high costs:

### 2.1 Lock in effects

Lock in effects is by far the most negative factor. These effects are both technical and legal/contractual.

Technical "lock in" rest on proprietary closed standards, closed API:s (if any), factors as no web based interface as standard, no possibility to export the entire data base etc.

Legal lock in is bound by a contract, e g giving the effect that although a municipality has collected data, saved it in a database and then used it on a daily basis, this data base is not owned by the municipality, but by the suppling company.

If the municipality wishes to export the whole database, e g to transfer it to another (competing) system, the supplier can legally prevent this, or create high costs for the permission to export data.

The situation has also been acknowledged in a study by Richard Wessman, Doctor of Laws (LLD), for the Swedish Competition Authority. Among others he points out that the de facto lock in creates a situation where it is impossible for the public sector to change suppliers, that municipalities often are locked into an oligopoly-like situation where suppliers have a de facto monopoly as soon as the systems are installed.



Dr Wessman also shows that municipalities, being rather small units, often have a disadvantage in the negotiation process with large suppliers. The power balance is often beneficial to the suppliers.

(The study can be downloaded here – in swedish with a summary in english:  
[http://www.kkv.se/upload/Filer/Trycksaker/Rapporter/uppdragsforskning/forsk\\_rap\\_2013-2.pdf](http://www.kkv.se/upload/Filer/Trycksaker/Rapporter/uppdragsforskning/forsk_rap_2013-2.pdf) )

## **2.2 Interoperability**

An additional problem is that interoperability between different systems, delivered by competing suppliers, is low thus preventing an efficient data handling.

Larger suppliers try to lock in clients into a supplier-specific “echo system” of their own. External software from other suppliers is simply not allowed.

## **2.3 The EU-commission and Horizon 2020**

The EU-commission has pointed out a number of important steps to reform and/or develop the public sector in Europe, with the aid of ICT.

These quotes are from the document: “ICT-enabled public sector innovation in H2020”

- “Stimulating the creation, delivery and use of new, personalized public services and facilitating the use of ICT tools for transparent, participatory and accountable decision-making by public administrations. (Topic INSO-1)”
- “Developing reusable service components, methods and applications to enable public authorities to quickly open their decision-making processes in order to engage with young people, allowing them to become active actors in all activities of the public sector. Topic YOUNG-5b”
- “Supporting innovative SMEs, including start-ups, for the design and creation of innovative applications, in order to foster the delivery of mobile public services and thus help the interaction of citizens and businesses with public administrations. TOPIC INSO-9”

( Downloaded from: [http://ec.europa.eu/information\\_society/newsroom/cf/horizon2020/document.cfm?doc\\_id=4005](http://ec.europa.eu/information_society/newsroom/cf/horizon2020/document.cfm?doc_id=4005) )



## **2.4 Innovation is blocked by old structures**

Innovation in the public sector lays in the foreground as an important development factor for society. Unfortunately the lock in and interoperability effects mentioned earlier obstruct the possibilities for a more rapid change, and need to be constructively addressed.

Innovation on a larger scale, by SME:s, by students, by anyone wishing to engage in the innovation process just by doing is, in practice, effectively blocked by the lock in structure of ICT in the public sector

In order to create innovation, we need to find solution for avoiding the basic lock in problems first.

## **3 A proposed strategy**

The main problem lies in the fact that often data produced within the public sector is owned by, and only available to, the supplier of the system who controls in what manners this data can be exposed to the organization and to the end user.

This lock-in effect is often an effect from current work practices for public sector procurement and is not due to technical reasons.

The supplier also controls the development of the system and has no incentive to improve a system, as this would require investment and therefore reduce the profit.

The public sector faces an oligopoly of suppliers where no supplier has an incentive to change this situation. Attempts to compete by smaller or new suppliers are handled with oligopoly logic – just buy the competitor and then continue as before.

This is not an efficient way of to speed up development in the public sector.

### **3.1 Open platform**

Instead the public sector could use open platforms, with open API:s, open documentation and open standards, to store data and define basic routines and processes for handling data

Open is currently a buss-word with a lot of different meanings. Therefore it is important to understand what we mean by "Open platform".

#### **3.1.1 Definition**

On Open Platform:

- uses open standards
- uses open and well documented API:s
- has open documentation



- uses open databases
- is built in open source with standard components in the open source “echo-system”
- has no proprietary elements in the setup

The platform would permit access via the API:s by third party components that are built onto both open source and proprietary code.

Thus the platform that is the “infrastructure” of the service would contain data and basic routines and processes for handling data that will prevent and/or avoid any lock-in or interoperability problem.

(Compare with Eclipse where the platform is Open Source Software, but the platform allows any third party code to access its API:s)

### **3.1.2 Interacting with other suppliers**

Using an open platform would give other suppliers (or the public body itself) the possibility to process data outside of the system, create a number of services that are external to the platform, yet keeping all the strategic data in one place (the platform).

The platform itself does not need to keep track of all different types of units that will access it. The supplier of the open platform will only be responsible for the basic technology and a standardized administrative interface.

### **3.1.3 Buy out**

Experience in Sweden shows that larger proprietary platform suppliers have bought smaller emerging companies with a more appropriate platform, eg with business logic for schools.

This basically means “buy out” in order to keep competition to a minimum, and to preserve the oligopoly situation.

But this situation would change if the public sector would use open platforms.

As the platform is open, it cannot be closed down simply by buying the supplier. As the API:s and the documentation are open, complementary suppliers can easily create products that would suit the platform, or even create a competing platform using the same API:s.

### **3.1.4 Management**

Management of the code is an issue out of the scope of this document. It could be handled by trust funds or other organizations, e g within a private public partnership.

Under all circumstances the platform must be freely available even for other suppliers wishing to fork the code.



### **3.2 Multiple channels, interfaces and suppliers**

The communication with the end user will be handled by a number of channels, applications and means. The platform can be called from web, mobile phones, pads, that is, from a number of different systems.

And when new means of communication appear on the market, it can easily be integrated as one more communications channel.

A number of suppliers, developers can use the data from the platform, present it, modify it and/or restore it into the platform.

As the platform is created for external communication, with well defined API:s, all data in the platform can be used externally by general or highly specialized applications.

It would be possible to create a general web based view for an administrator. At the same time, in another channel, parts of the data can be used to present information for highly specialized purposes, e g groups of disabled/blind people in a mobile app that would be custom built for the needs of this group.

One does not any longer need to make compromises trying to satisfy both an undefined general public and specialized target groups in the same user interface.

As the API:s are open, the specialized applications/interfaces can be constructed by anyone having the knowledge about their target group. We will no longer be dependent on one supplier trying to cover all needs from within their own technical organization.

### **3.3 Integrity**

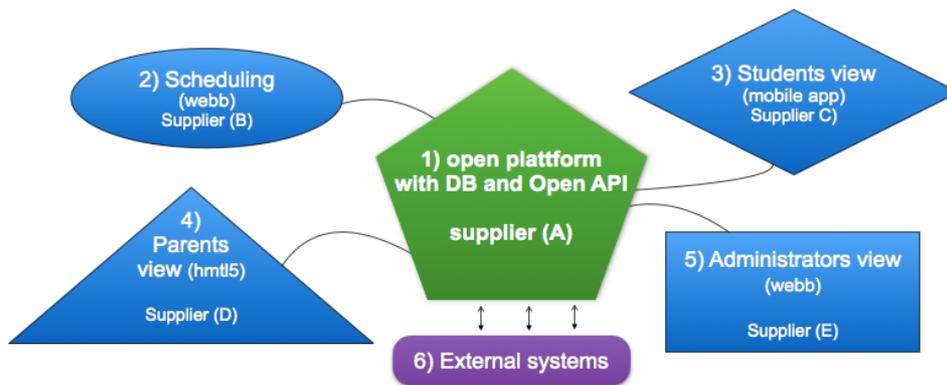
Of course there are safety issues and integrity policies (who is allowed to access what?) that need to be put in place. This is however something that needs to be done in any system and is actually facilitated by the open approach.

## **4 An example – a proposed school system**

This chapter will try to show the open platform philosophy by using a school system as an example.

The system described is limited in function, our purpose is to explain the principles, not to define a complete school system.

The philosophy explained in this document is NOT limited to the school. It can be used in any part of the public sector, in any system.



#### 4.1 Open Platform

The School Platform (1) contains all data necessary to keep track of students, teachers, administrators, parents etc. It contains the students results, the daily schedule etc.

It also contains the database and business logic.

The platform is built by Supplier A) – who’s responsibility is to make all data as easily and openly available, as the security policy allows.

#### 4.2 Scheduling

One important part of a school is the schedule. In this example the schedule itself is created in an external application (2) that can handle the complexity in the process.

But the results, where every group, every student and teacher, is supposed to be, is fed to the platform.

Scheduling systems can be supplied by anyone. The specific school can use any scheduling system, by preference, as long as it uses the platforms API.

#### 4.3 Students view

The student has a number of functions he/she needs (3).

Lets continue with the scheduling example:

- on a daily bases the student needs to know where to be when  
”it is 9.25 – where am I supposed to be at 9.30, and what am I supposed to do?”  
This could be achieved by a simple app using the students info
- export the whole years schedule to google calendar – simply done via a web interface
- check messages from the teacher – in the mobile or iPad, or via web interface



- etc

Using the open platform philosophy, even students can write their own applications accessing the data they wish. (Infact a swedish student group did this, but they were not allowed to extract data from their particular school's system)

#### **4.4 Parents view**

What would parents be interested in? Their children's presence at school? Just create an app (4) that checks that. Other info on their childs achievements? Check it through the web...

#### **4.5 Administrators view**

The school administrator needs a complete view (5) of all the activities. This view may probably be a little bit more technical, as it contains a lot of data. The administrator will be skilled to understand the system.

If this interface is an application on the administrators computer, or a web page based solution, does not matter. There might be a number of different ways to access the system.

#### **4.6 External systems**

Through the API:s it will be possible to connect the open platform to any type of external system (6) that needs to communicate with the platform.

#### **4.7 Multichannel strategy**

As can be seen in the examples above, the open platform philosophy opens up for a true multi channel strategy. This does not only mean that multiple channels may be used for the same content, but also that both the content and the way it is presented can be altered.

A channel means:

- type of unit (mobile, iPad, browser etc)
- interface type (graphic, audial, sensory etc)
- selection of data/information
- type of processing

The information flow can be truly adapted to multiple target groups needs through the assistance of multiple suppliers.

Please note that it also would be possible to automatically integrate information from non-human sources like sensors, other computers etc. This is simply another channel for input/output.



## 5 Proposal

If systems created for the public sector would follow this simple philosophy, the ICT development speed would increase and the TCO (total cost of ownership) would diminish.

In other words, the service to the whole society would improve.

Visby, Sweden 2014-02-17

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