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Sensorica service systems

[See general consultancy development webpage](#)

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Sensorica's experience

Offering open commercial services

Background

In January 2015 Tibi decided to take service offerings to a new level, in order to bring some revenue for Sensorica affiliates. The idea to offer services is not new, but it was always kept as a secondary add on to Sensorica's offerings. The main focus since the summer of 2014 has been the development of new hardware products.

A new push for offering services started in the summer of 2014, with the initiative to offer consultancy services around p2p by creating a local center of excellence on p2p around Sensorica. Tibi contacted Jon Husband to kickstart it and we organized our first p2p event. But this initiative did not take off. Towards the end of the same summer of 2014, under Tibi's initiative, Sensorica successfully offered a [Digital fabrication and 3D printing](#) course, which generated revenue for 5 affiliates who took part in the initiative. This was also the first time a [benefit redistribution algorithm](#) was used to redistribute revenue. The push became more concrete under the influence of Hernando, after one meeting with Tibi at [District 3](#), in Montreal, in the fall of 2014. In January 2015, Tibi created a [cluster of services](#), posted them on the website, and announced the initiative to the entire Sensorica community. In April 2015 Sensorica successfully delivered its first *crowdsourced R&D on demand* service to Ateliers Barda, the [Periscope project](#), which generated revenue for three Sensorica affiliates.

In the meantime, Daniel intensified his 3D services through the [BDan Concepts](#), an [exchange firm](#) for 3D modeling and 3D printing, expanding it to 3D renders and 3D videos in September 2015. The difference is that these services were offered by Daniel in solo.

New *crowdsourced R&D on demand* service initiatives were developed in 2015 and 2016, with the [PV characterization](#) project, [Sensor Network](#) project and the [Blockchain Access](#) project.

See more service cases on [Interfaces between open organizations and classical institutions - the Sensorica experience](#).

Offering closed commercial services

Background

Scenarex venture. Sensoricans involved: Jim, Valentin, King, Tibi

Rationale

Sometimes sensoricans are called to provide services to clients, individuals or organizations, that imposes non-disclosure conditions and want to create IP. We need to avoid this kind of services as much as possible, because they are not in synergy with other Sensorica projects, since the outputs cannot be remixed. These service projects don't add much to the commons, don't increase the remix capacity of the network, which is what increases the speed of innovation within our OVN, and makes Sensorica a more powerful economic attractor, which in turn makes it relevant on the market and produces its network effects. Having said that, some closed service projects are very lucrative and, in some circumstances, they can also allow sensoricans to acquire new skills and to develop new relations. Therefore we need to acknowledge their relevance and treat them with care.

How can sensoricans deal with closed service projects while continuing to add potential to OVN?

We can think about this by invoking 2 principles

1. **Everyone can know that something is happening.**
2. **Openness : everyone has the right to participate, under certain conditions and rules that apply to everyone.**

In order to respect the first principle, we need a root space where all current or future closed service projects are listed and described (a [register](#)). Links to repositories of information must also be provided, even if these links may lead to closed documents, protected web pages, or to encrypted information, in which case their existence is revealed, but the content is not. This allows network affiliates to ask questions, and they can ask access to participate/contribute, which is about the second principle. Participation **MUST** be granted to any network affiliate, under conditions of non-publication or non-disclosure. This is an *open but non transparent project case*, for which we already have precedents ([see reference](#)).

What **MUST** be avoided at all cost, is allowing affiliates to do things in complete secrecy, while using the resources of the network. That is because these affiliates could do anything, can compromise the network by their unseen actions, while using the network's resources, and they can escape paying back to the network (our 5%) for infrastructure maintenance and

development. This could be a loophole that could drain the network of its resources and jeopardise its image. People would join and run their own private businesses from our labs, generate revenue, benefit from the flows within the network, perhaps even stealing business from other sensoricans, ... This can become a network killer! Sensorica has been there once in its past, [see document](#).

P2P service

Philosophy

- Implement a globally distributed service system, decentralized and self-organizing.
- Make our service system transparent.
- Automate logistics as much as possible.
- Provide control over our services process to the customer.
- Give the customer the chance to play an active role in shaping/improving our products and services.
- **Add others...**

Definitions

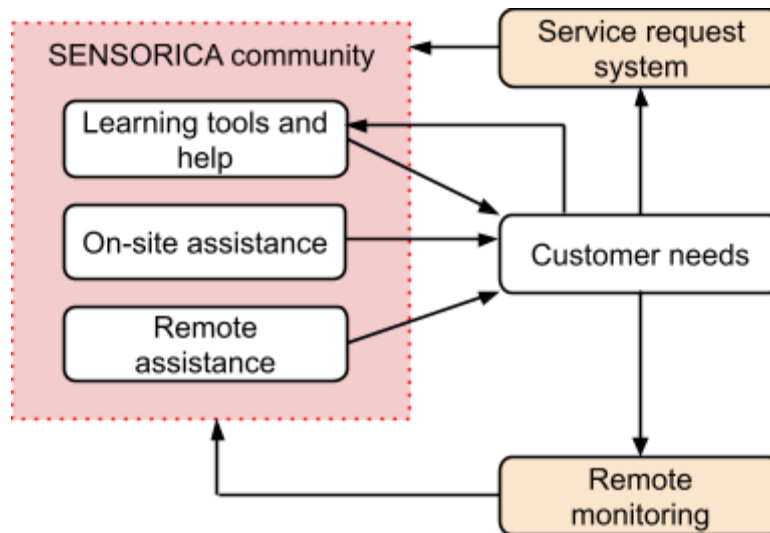
Sensorica: is an [OVN](#), a [commons-based peer production](#) system. We can also refer to it as *Sensorica network or community*.

Sensorica product: is a product designed and produced by the Sensorica community, which is labeled with the Sensorica logo (copyrighted), and which respects all the norms and is compatible with all the principles defined within the Sensorica community.

Sensorica brand: *A **genuine Sensorica product** is one which is brought into existence through Sensorica's processes, AND one that respects all Sensorica's norms. The **product** must be tolerated by the Sensorica **community**, taking into consideration quality, environmental issues, price, ethics, etc. Moreover, the **product** must be exchanged through an **Exchange firm**, which can have an exclusive right to label a **product** as genuine, if there is a consensus reached within Sensorica. The exclusivity can be granted to avoid the go-it-alone behavior. [See source of this definition \(Business model 0.1\).](#)*

Customer: an individual or organization who purchases a Sensorica product, who is not an affiliate of Sensorica, and who doesn't participate in R&D, design or production of the Sensorica product.

P2P service system architecture for servicing products



Customer needs

Apart from purchasing a *Sensorica product* the *customer* may ask for installation, help and tutoring, repair, replacement, or other type of consultancy services. The *customer* who has a need is directed to the *Service request system*.

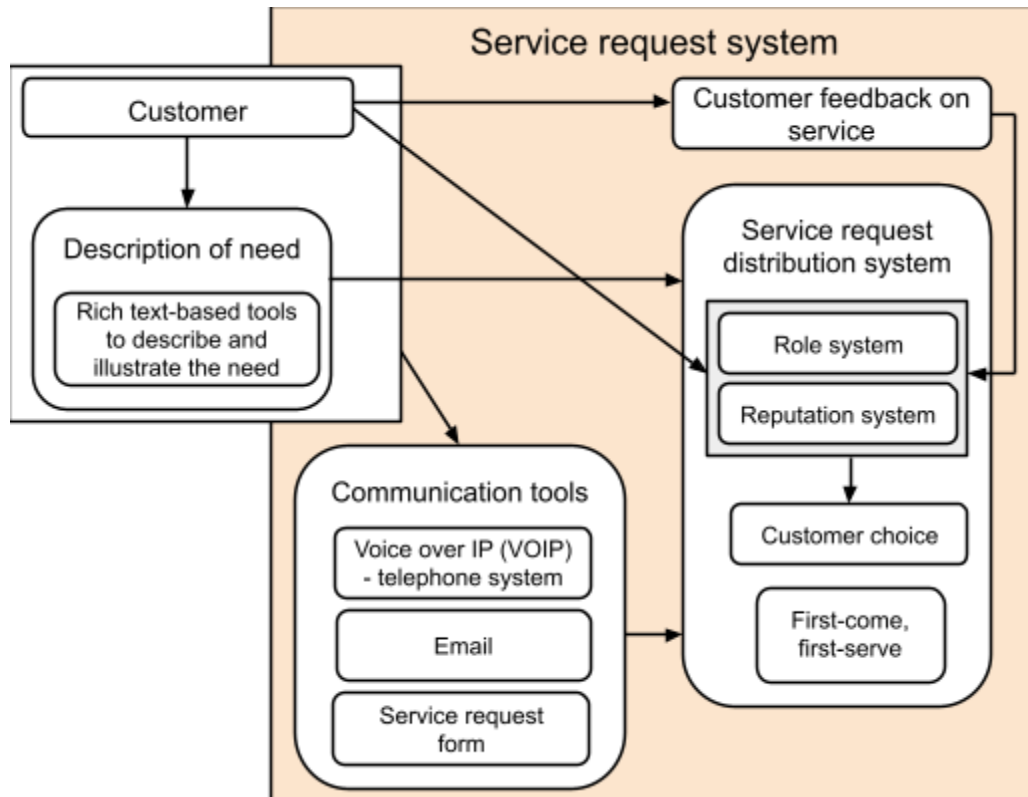
Service request system

Is an interface between the customer and the Sensorica community specially designed to efficiently address customer needs.

Communication tools

The *customer* describes the need and uses the *Communication tools* to address the *Sensorica community*. The customer can choose to send an *email*, to fill a *service request form*, or to contact the community by telephone through a VOIP service, which can automatically dispatch the call to different affiliates who assume the role of servicing customers. These affiliates are differentiated within the system by their *reputation* and by the value they have provided to the Sensorica community.

The *Description of the need* is transferred to the *Service request system* through the different channels of communication and a *ticket* is issued.



Service request distribution system

The *customer* can also use the *roles*¹ and the *reputation*² systems to choose a service provider contact, an active affiliate of the Sensorica community. The *roles system* shows the function of Sensorica affiliates within the value system (engineer of some sort, technician, scientist, etc.). The *reputation system* compiles the service history of affiliates, and gives the customer an idea about the quality of the service provided by a particular affiliate. Other criteria can be used by the affiliate to decide, like the geographical location for example, in case he/she needs on-site assistance.

If the *customer* decides not to choose the service provider contact, the first Sensorica affiliate who answers the *service request* starts to process the request. The history of value provided as well as the reputation can also be taken into consideration.

¹See more about *roles* [here](#).

²See more about *reputation* [here](#).

The *role system* provides on demand a list of Sensorica affiliates who are apt to provide a specific service. This information is automatically extracted from our *project/task management system*, from our *activity recording system* and from our [value accounting system](#).

Customer feedback on service

The *customer* is encouraged to provide feedback on the service, which will affect the *role* and *reputation* systems. The *customer* is also encouraged to participate to improve Sensorica products and services in a broader sense.

Remote monitoring

Our intention is to build *smart products*, capable of reporting problems automatically, through the Internet, to the Sensorica community.

The *Remote monitoring system* will be always in communication with products. It is able to anticipate malfunctions and to automatically issue service tickets, before the customer is even aware of coming problems. The customer has the choice to connect his product to the *Remote monitoring system*.

Because Sensorica is open and transparent there can not be abuse of this power of having real-time access to the state of products in the hands of customers.

Literature:

See [Towards a sensor commons](#)

Learning tools and help

These are online tools like interactive manuals and forums.

Transparency

The service system is transparent, in the sense that the customer can follow a ticket as it moves through the system. This allows the customer to intervene at critical moments during the process and thus to avoid costly errors.

Transparency also helps to improve the service, since Sensorica affiliates are exposed while they are working to solve a customer problem.

Complaints

The service system must allow for complaints.

Reasons for complaints:

1. Complaints can be issued by the customer because of malfunctions of the product. In this case, according to the guarantee offered with the product, the product can be exchanged or repaired. If the product needs repairs, it will be sent to the manufacturer, affiliate of Sensorica, or the group in charge of manufacturing. Every step in the repair process is logged and the information is shared with the customer. The customer can follow the process and intervene at any moment.
2. Complaints can be issued because of bad service from an affiliate. In this case, the Sensorica affiliates in charge of the project process the complaint, and decide what action to take. The reputation of the affiliate in cause might be affected, which affects the ability of this affiliate to extract revenue from his activities - see the reputation system and how it is connected to the value accounting system. The process is transparent and the customer is informed.

Structure, process, tools

Outreach

Anyone can take initiative to create a new offering and push it. This initiative must be presented to the entire community before taking any concrete public action. The initiative must be aligned with the mission and the image of the Sensorica OVN.

Procedure:

- Define the offering
- Get feedback from the Sensorica affiliates, see if this is feasible
- Create virtual space for collaboration (see [procedure for starting a project](#))
- Create the promotional/outreach material
- Plan the outreach campaign
- Plan project
- Make estimate (use [this template](#))
- Validate the estimate with peers
- Send estimate to customer

If there is a positive answer from the client and from the community a group is formed to deliver. In order to form a team, an outreach campaign for resources is needed. This campaign can be deployed within the Sensorica OVN, to other affiliated networks, and even widely through social media. The incentive system must be well described. A project Governance doc and VE must be created.

Evaluation

A client's request is brought in. The request is put into a short document that will be used to form the working team, within a virtual space for collaboration, accessible to all the participants. Defining the requirements: make sure everyone understands the customer needs. Note that usually customers express what they want, which is not the same as what they need. You need to work with a technical team in order to translate wants into needs.

Our past experience tells us that there must be some degree of separation between those who maintain a relation with the client and the technical team.

An outreach campaign for resources is put in place and deployed. The propagation can be incentivised, by allowing someone to take a % of the reward for having sent someone with the proper skills.

This working team evaluates the project, formulates a list of roles, milestones and deliverables, and formulates invoices for every milestone. These invoices are presented to the client. If the client agrees to pay the project starts. The client can have the option to stop the relationship after each milestone. Every milestone must be delivered with enough information to enable the project to be continued in a different way, by another group.

Structure

Create a project in [Sensorica's NRP-VAS](#), a project governance, a value equation and a value equation agreement, as well as a custodian agreement.

We are working on templates for all these things (you'll find them [here](#)). See the [Barda project](#), and the [Sensor network project](#) as an example.

In order to add accountability and to be able to get paid the group might need to create or use an existing [Exchange firm](#).

The project must be planned in [Sensorica's NRP-VAS](#).

Project management

Make sure there is enough redundancy to complete the project, i.e. enough people per important role, in order to increase the probability to close to 100% to have tasks done.

Responsibilize participants from the start.

Use the planning tools in [Sensorica's NRP-VAS](#). These tools are linked with the value equation and will make your life a lot easier for redistribution of revenue.

Generate a conceptual design and verifying that all requirements are met.

Roles

During our experience with Barda, PV characterization, and Sensor Network projects we have identified a few very important roles.

Project responsible - main interface with the client.

Facilitation - guides newcomers to the project, makes sure everyone knows what to do.

Coordination - makes sure that everyone is where he/she is supposed to be, takes care of temporal dependencies and deadlines.

Content management - captures, surfaces and attributes content. This is the work of curation. Documentation is very important for the client (passing the burden of ultimate decision making to the client), but also for the working team (ensures better coordination, continuity,).

Communication - this is used in outreach campaigns and in relation with the client (send short reports, manage expectations, get feedback and inject it in the process, etc.).

Other roles depend

Outreach - get enough participation in the project in order to make sure that it will deliver in time.

Service request to Sensorica

This is still an early draft...

Case: someone calls a Sensorica lab and asks for technical help.

French version

Nos solutions sont open source.

Selon la valeur perçue par les affiliés du réseau Sensorica nous pouvons avoir plusieurs arrangements.

- **Gratuité:** Il est toujours possible de trouver un affilié du réseau qui veut travailler de manière gratuite sur un projet. Les sensoricains sont des êtres libres. Pour trouver une personne du genre, il faut utiliser nos canaux de communication ou simplement passer au labo. Petite note: aucune personne dans Sensorica ne peut décider pour une autre personne dans Sensorica (nous n'avons pas des relations de pouvoir)!
- **Équité:** Si le projet a du potentiel nous pouvons nous arranger pour collaborer ensemble pour développer ce système de chauffage. Cela veut dire que vous allez investir du temps et d'autre ressources avec d'autre affiliés de Sensorica pour construire le système de chauffage. Si ce système chauffage est en demande, vous devenez "co-actionnaire", dans le sens de Sensorica, et vous partagez les revenus générés par la vente d'autre systèmes en proportion avec votre contribution finale, [selon le système de comptabilité de valeur](#). Le est en open source. Vous devinez que plus la demande est grande plus de sensoricains vont vouloir travailler sur le projet et plus vite le projet sera réalisé. En tant que partenaire, vous pouvez aussi prendre des rôles de facilitation, motivation, administration, etc. Petite note: vous pouvez toujours amener des individus avec des compétences nécessaires à l'extérieur du réseau Sensorica, dans le réseau et faire le travail dans le labo Sensorica. La condition est que le projet reste ouvert et transparent. Des fonds peuvent être levés en collaboration pour le projet, soit par voie classique soit par crowdfunding ou autre. Ces fonds sont distribués à tous ceux/celles qui participent au projet.
- **Vente:** Si personne ne veut travailler gratuitement et si personne ne perçoivent une demande pour le système de chauffage vous pouvez quand-même essayer de trouver

quelqu'un, ou un groupe, qui accepte de prendre le projet en échange d'un paiement.

Discussion

Daniel's case

We had a 1000\$ small contract to demonstrate a 3D video for HEC Montreal, that lead to a 10K contract. Tibi played the role of interface, with Daniel in the technical role. After the first contacts and the list of requirements Daniel took over the relationship with the customer. From a small proof of concept video the customer added more and more requirements. Daniel didn't know how to manage expectations and put limits. He ended up doing a lot of work and got frustrated. Tibi intervened and put some limits, making the customer understand that our work for the price of the proof of concept was limited. In the end the customer was not happy, we got paid for the first part but we didn't get the rest of the contract.

Lesson: managing customer relations is not an easy thing, and most technical people don't have the skills for it. The service probably needs to be managed in tandem, between individuals who play the role of interface and individuals taking technical roles. Some projects are complex and require back and forth with the client. In these cases, technical people need proximity to the client. But the interface individual needs to stay on top of these interactions as a mediator.