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EUNIS 2024: Co-creating and validating customer value in Higher Education IT Services using Service Design

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Abstract

Value creation and its transformation is one of the organisational elements required for successful digital transformation.

This paper provides an overview of value and value co-creation. It also shows how value creation can be seen in IT services in higher education and how it is part of the service lifecycle at Tampere University. It describes how service design methods have been used to capture customer insight and co-create value, and to validate the value of existing services in a collaborative environment with customers.

The presentation also shows how the method of learning by doing can be used as a tool to increase the organisation's ability to use the joint sphere for validating and co-creating value in the services and to increase the ability for continuous improvement.

1 Background and starting point

At the Tampere University, multidisciplinary research is carried out across the boundaries of scientific disciplines. More specifically, our strengths lie in health, technology and society research. There are more than 2,800 researchers at Tampere University, and our research groups conduct multidisciplinary research with national and international partners. The Tampere Universities community includes both Tampere University (TAU) and Tampere University of Applied Sciences (TAMK), which work in close cooperation. More than 35,000 students study in the Tampere Universities community.

When the three universities in the Tampere region were merged into the Tampere Universities community in 2019, the IT services of the three universities were also merged, and the joint IT services of the community created a service catalogue combining the three previous ones and started to consolidate services. IT service management was carried out using a common IT service management

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system, configuration management, and instructions were created for both customers and IT service staff. Once the consolidation work was complete, it was time to take the next steps in digitalisation.

The role of IT in organisations is shifting from the function of maintaining infrastructure, automating basic processes, and producing information to being a partner in creating service strategy and supporting core capabilities by improving efficiency, scalability, reliability, and predictability in operations, and driving and facilitating agile development innovation according to customer needs. (Zaki, 2019.) Kähkipuro (2023) presents a framework for digital transformation in higher education and recognises value creation and changes in it as one of the organisational elements needed to successfully implement digital transformation.

In order to take a further step in this direction, at the beginning of 2023 we started a project to make our customer-facing IT services, service offerings and processes more customer-centric and valuable for our customers and the entire Tampere Universities community. In this work, we use the methods of service design. Secondly, we are focusing on designing the structure of services and the service catalogue so that they are easier to manage in customer service and as part of the service lifecycle. In addition, we are ensuring that the structure of the services and service catalogue will provide us with good quality data, and that it will also enable us to automate processes and improve efficiency. One of our goals in the project is also to give the IT services staff the opportunity to learn by doing. We are involving staff in the service design process and encouraging them to look at services from the customer's point of view to help them move from a production perspective to a more customer-focused perspective. In this way, we can continuously provide services that create more value for our customers and are needed for more agile adoption of innovations (Zaki, 2019).

In the following, I will present how value creation and customer experience as part of it are linked in our project in the context of IT services in higher education. In addition, I will practically present how we used service design methods to validate the value of our existing services and co-create value with our customers, and how service design is a part of it, combining the customer and organisational perspectives. I will also present the overview to continuous Service Design process I have developed during the project. I will not cover the creation of the service offering and service catalogue in this paper.

2 Value creation

In its simplest form, the value experienced by the customer is defined as what the customer receives (benefits) in relation to what he has to give up (price or sacrifice) (e.g. Gale 1994). In the business world, the meaning of value and the process of value creation have been shifting for some time from a product-centric view to personalised customer experiences, and active consumers have begun to co-create value with organisations. (Prahalad and Ramaswamy 2004.) Zaki (2019) points out that empathising with customers and seeing things from their perspective to ensure success in service delivery must also be considered in B2B (Zaki, 2019). In higher education, it is safe to say that we have both B2C and B2B customers. The highest level of customer segments in a higher education institution (HEI) can be seen as, for example, students, teachers, researchers, staff, faculties and other units and also the external stakeholders such as student prospects, companies and other collaborative organisations. The students, teachers, researchers and staff members in general can be considered as B2C customers and the whole organisation itself, faculties, other units and stakeholder organisations can be considered as B2B customers. Zaki (2019) notes that B2B decisions are usually made by multiple stakeholders. Therefore, it is even more important to understand the customer experience (Zaki, 2019). Maltusch and Suominen (2023) present the higher education capability model and the value chain for a learner as an example of value streams linked to core capabilities. They also note that not all value creation creates value for both the learner and the HEI.

The main function of HEI IT services is to support the core capabilities of the HEI. Co-creating value with customers is a way of validating the customer value of the supporting services and ensuring that the service offering provides value to both the HEI organisation and the customers of the services.

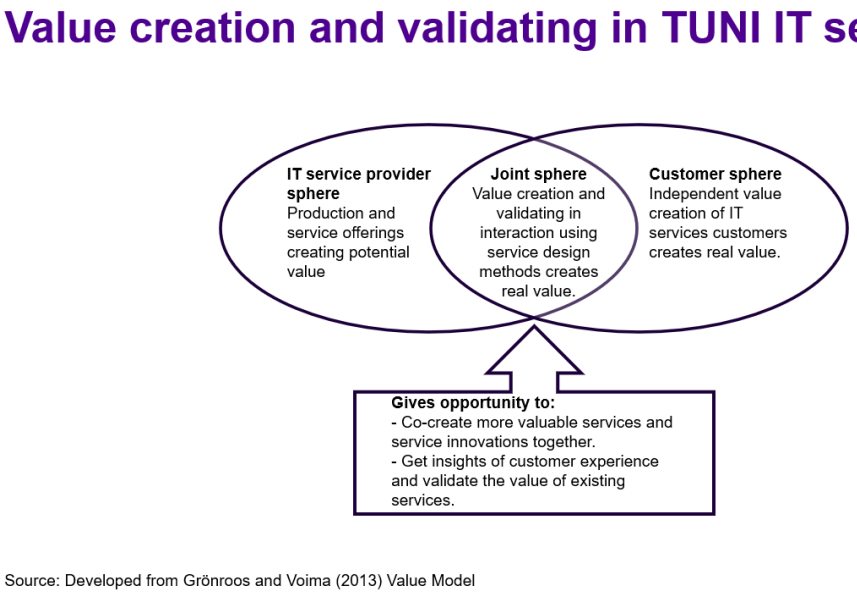

Figure 1: Value Model of Tampere Universities IT services

Grönroos and Voima (2013) present a Value Model that describes how value creation involves the activities of service providers, customers and other stakeholders. A modification of this value model presents how value co-creation is seen in the IT services of Tampere Universities. The value creation process consists of three spheres:

- the service provider sphere, where the IT Services operate,
- the joint sphere, where IT Services and customers interact directly, and
- the customer sphere, where customers act independently or in a social context and continue the value creation process without the IT Services.

The IT Services create potential value in the provider sphere for the customers and the co-creation of value takes place in the Joint sphere. The shared Joint sphere gives IT Services the opportunity to gain customer insight and validate the value of existing services. It also provides an opportunity to create more meaningful, targeted and valuable services and service innovations by working together towards the same goal. When the customer moves to the Customer sphere, the organisation's ability to influence value creation is lost and the customer's own experiences and social interactions drive the ultimate creation of value. This model shows why it is important to look for the shared spheres and opportunities to co-create value with our customers. Wetter-Edman et al. (2014) raised the question of what actions organisations should take to facilitate the design process, and what joint collaborative design actions the organisation and its customers could engage in to finalise the service to be designed.

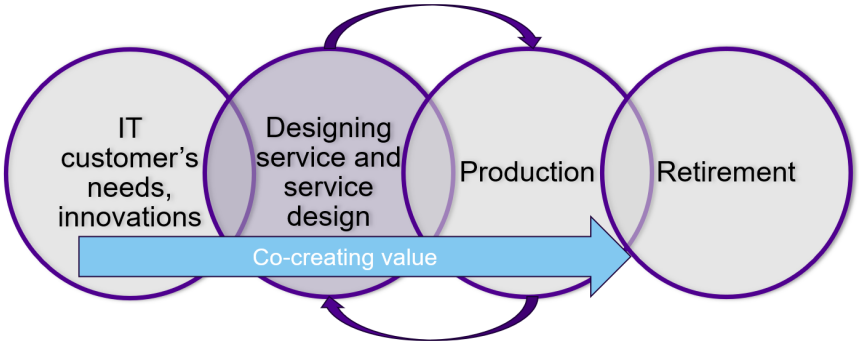

Figure 2: Co-creating value in the stages of the service life cycle.

Before asking what actions we should take to facilitate the design process, we should ask at what stages of the service lifecycle we can co-create value with our customers. It should be noted that value is not only created during service delivery, during production, but can be created at almost all stages of the service lifecycle (Figure 2). Junes and Turunen (2023) presented an IT Customer Needs Management Process, where needs can be addressed together with customers, so that their needs are taken into account and they can participate in the planning of the desired solution. As the IT Customer Needs Management Process ensures, among other things, that the proposed services are relevant in supporting or enabling the core capabilities of Tampere Universities, it is also often the first iteration of co-creating innovation and value. In the second stage of the lifecycle, we can use the full range of service design methods by interacting with the customers while designing new services. We can also use service design methods in the third stage of the service lifecycle, in production, co-creating and validating the value of existing services and our offerings, implementing the continuous improvement cycle.

3 Using service design to co-create and validate the value of services

Co-creating and validating value with our customers was implemented in our project using the service design double diamond process model. Previously, when designing user-centred services, the researcher was seen as a translator between the users of the service and the designer. Now, when using co-design methods, the researcher or designer acts in the role of a facilitator and the customers are part of the design team, providing their insights into the development process (Sanders and Stappers, 2008). In our project we used an outsourced service design service provider for training and facilitation of the staff resourced for the project. In the first design period the use of outsourcing in facilitation was 100 %. We used the learning by doing method and the IT services staff had the opportunity to learn service design first as researchers and then as facilitators. This approach has enabled us to lower the cost of outsourcing and create a continuous improvement method that also has a common sphere with our customers. In the following I will present how we have worked with these issues in practice.

3.1 Preparations

The aim of our project is to co-design the services that are visible to our customers. HEIs supporting services produce many services that play an extremely important role in creating and supporting

infrastructure, and other services that directly support the core functions of an HEI. However, it is important to note that they are not all visible to customers and should not be presented to them unless necessary. This is to avoid the anxiety of too much information and to avoid increasing the difficulty of finding instructions. With this in mind, we selected the services for the first round of design. In the first year, when we are learning the new way of working as an organisation, we use design periods of three months.

For the first design period, we chose four services that were different from each other, in order to set good examples for future purposes of the project. The services used as prototypes in the first period were as follows:

- Integration Service. Customer group: units. Service has been produced without describing it to the customers in the service offering.
- Consultancy Service. Customer group: units and staff. General service that has been produced without describing it to the customers in the service offering. Linked to many other services in SD2 level.
- Server Maintenance Service for research and teaching purposes. Customer group: units and staff. Service has been produced without describing it to the customers in the service offering.
- Locker service for picking up and returning computers, phones and their accessories. Customer group: units, staff and possibly students. New service.

We started working on the topic using an outsourced service design service provider for training and facilitation of the designers. The IT managers and staff involved in service design were trained in the key concepts of the project: creating a service catalogue and offering, and service design principals and double diamond process.

3.2 Designing services

Figure 3 shows the process of designing services in the form of a double diamond for the IT services of Tampere University. Depending on whether the service is visible to customers or not, and whether the service already exists or not, the phases of divergence and convergence fluctuate differently. In our project, these four phases are seen as the first iteration of continuous service improvement. The same double diamond model is also used in a lighter version from an innovation point of view in the customer needs process mentioned earlier in the paper. The double diamond process can be repeated successively if necessary to achieve iterative development.

As stated earlier, we started the work by identifying the services that needed to be designed. Managers gave the project a resource of two to three people per service to form a design team and increase knowledge of the approach. In subsequent workshops, the design teams, led by their facilitators, identified the customers of their service and planned ways of involving them and the questions to be asked.

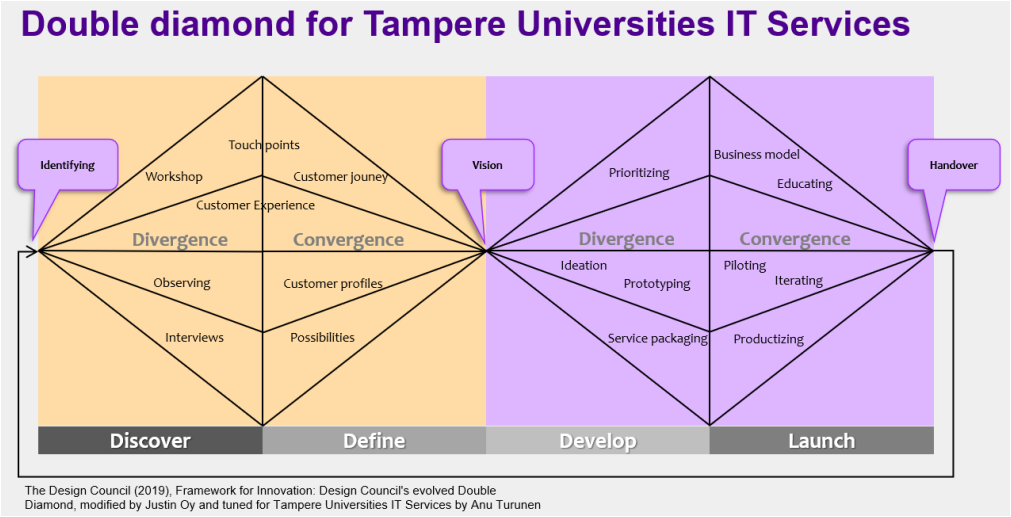

Figure 3: Designing services: Double diamond for Tampere Universities IT Services

The first divergence part of the double diamond is about discovery, and this is where we can create the joint sphere to co-create value. We learn what our customers value, whether we are producing a service that is valuable to them, how their customer experience is formulated when using the service and what we can do to improve the experience and value. In the first design period, the joint sphere was created through interviews. One of the services also had an observation scene, as the nature of the service had a physical touchpoint in the form of a delivery box. Customers were selected from the existing collaboration networks of different customer profile groups and invited to an interview. It was suggested that six to eight customers should be interviewed, which is considered to be a sufficient number of different views in qualitative research on a narrow topic. Some of the interviews were conducted face-to-face and some were conducted in Teams. The questions were phrased in such a way as not to guide the participant and to allow room for customers' experiences and emotional states to be expressed. In addition, the questions aimed to find out what kind of service customers would like to use and what kind of service would be of value to them. They were also asked how they would like to see the service improved.

With the insights and knowledge gained in the divergence phase, we moved to the convergence phase to define what kind of customer profiles we have using the service, what their customer journeys are like, and what opportunities there are for customers. To do this, we used the affinity diagram to sort the findings from the interviews. The aim of this working method is to give IT Services staff the opportunity to look at the service from the customer's point of view and to focus on solutions to create, develop or improve the service to make it more customer-centric.

During the development phase of the double diamond, we were able to look at the services from the customer's point of view and generated many ideas for developing the services and their customer experience. We kept the ideas in the service development backlog to be developed in production teams according to normal processes as line work, and focused on packaging the services to create structures for automation and efficiency to also support the development of the customer experience. The launch of the services was implemented through normal change management processes. The publication of the renewed customer service offering brings new perspectives to the service offering for some previously undescribed services. Work on the service offering and service catalogue is ongoing.

The second and third design periods were implemented in much the same way as the first. However, some different approaches were used to improve the resource efficiency and to adjust the model to fit

better to our own needs. We have used the services of the first design period as models to help participants better understand the intended outcome of service design and the different steps involved. Some of the IT services employees moved from being researchers to facilitators. Some improvements in the use of resources have also been made through preparatory work, such as segmenting customers to create customer profiles and experimenting with different methods of participation.

The double diamond process model has given us a clear model of how we can create joint sphere to create and validate value together with our customers. We have already reviewed twenty-three services with our clients using service design methodologies. The emphasis on the customer perspective in the design workshops has generated a number of service development ideas for continuous improvement. We have made good progress in training our employees and giving them the opportunity to learn by doing, which will increase our capacity to work in a more customer-centric way in the future and to co-create and validate value together with our customers. Fourteen of the more than fifty IT services employees that participated the design periods have been trained from researchers to facilitators of their own design teams.

4 Continuous process

During our project I have gathered information by interviewing and observing the participants for future needs. Using that information I have created a continuous service design process to ensure that continuous improvement of services and innovation through validation and co-creation of value with our customers continues and benefits the digital transformation. Figure 4 shows the process overview and roles.

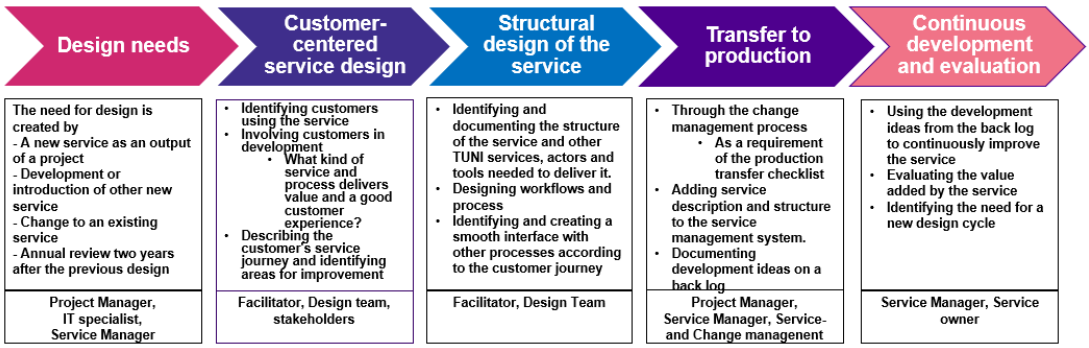

Figure 4: Process overview and roles: Service Design Process of Tampere Universities IT Services

The IT specialist or project manager developing the service is responsible for implementing the service design process for the service under development, and the service manager for the existing service.
The service designers forming the Design Team are members of the IT Services team responsible for the service development. The facilitator of the Design Team is one of the facilitators of the relevant IT Services team. The process allows customers to participate in the design of the service. Process ensures the structural design of the service to meet service management and architectural requirements. Advice and support on the process, methods and tools is provided by the Service Design virtual team.

5 Conclusion

Our service design journey continues. We have already given hundreds of our customers the opportunity to co-create value by designing customer-facing IT services that they use in their daily studies and work.

We have co-created and validated the value of twenty-three of our services with our customers using service design. Customer-centred development through design methods is off to a good start. Several service development ideas have been generated in design workshops. The creation of model services using a pilot in the first design period has been worthwhile. Service design workshops on campus with open invitation to network groups have been tried and it was clear that the possibilities of hybrid and distance working are a challenge for this kind of events. The best way to involve clients would be using virtual facilitation, to invite them personally to campus events or to bring the workshop into their existing meetings. In the best case scenario, the customer's new service offering would already be in place before the design of individual services began. This would make it easier to group and rename services.

The double-diamond service design process was found to be a good way to improve service through customer insight. The resource intensity of the process can be reduced and the homogeneity of the results ensured by preparing the structural parts of the service to be used in advance and, for example, by segmenting the customers. Fourteen of the first and second period researchers have been trained in facilitation and have successfully facilitated their own design teams. Over fifty IT specialists or IT managers in total have participated in the design teams as researchers/designers. This method of learning by doing has increased the organisation's ability to use the joint sphere to validate and co-create value in the services.

Next, we will continue on developing the new service design process to ensure that continuous improvement of services and innovation through validation and co-creation of value with our customers continues and benefits the digital transformation.

6 References

Aractingi, E. et al. (2016), Demonstrating Value Through IT Service Management in Higher Education. Research bulletin. Louisville, CO: ECAR.

Gale, B.T. (1994), Managing Customer Value: Creating Quality and Service That Customers Can See. The Free Press, New York.

The Design Council (2019), Framework for Innovation: Design Council's evolved Double Diamond. Retrieved April 12, 2023, from https://www.designcouncil.org.uk/our-work/skillslearning/tools-frameworks/framework-for-innovation-design-councils-evolved-double-diamond/

Grönroos, C. and Voima, P. (2013), Critical service logic: Making sense of value creation and co-creation. Journal of the Academy of Marketing Science, 41(2), 133–150.

Junes, S. and Turunen, A. (2023), Managing customer wishes and expectations with the customers' need process and onion models of digital tools, EPiC Series in Computing, Volume 95, 111–118.

Kähkipuro, P. (2023), Achieving Long-Lasting Digital Change in Higher Education. EPiC Series in Computing, Volume 95, 49–57.

Maltusch, P. and Suominen, E. (2023), Creating strategic and operational insight for management by using a Higher Education Capability model. EPiC Series in Computing, Volume 95, 37–48.

Prahalad, C. K. and Ramaswamy, V. (2004), The future of competition: co-creating unique value with customers. Boston Mass.: Harvard Business School Press.

Sanders, E. B.-N. and Stappers, P. J. (2008) Co-creation and the new landscapes of design. Co-Design, 4:1, 5-18.

Wetter-Edman, K., Sangiorgi D., Edvardsson B., Holmlid S., Grönroos C., Mattelmäki T. (2014), Designing for Value Co-Creation: Exploring Synergies Between Design for Service and Service Logic. Service Science 6 (2) :106-121.

Zaki, M. (2019), Digital Transformation: Harnessing Digital Technologies for the Next Generation of Services. Journal of Services Marketing, 33 (4), 429-435.

7 Author biography

Anu Turunen (BBA) works as an IT Specialist in the IT Services of Tampere University. She has three decades of experience in customer service and ten years of experience in IT customer service and IT communication for customers. In her current work, she focuses primarily on bringing value to customers and employees through developing IT processes and services and her matter of heart is in improving customer and employee experience.