

Please quote as: Dellermann, D.; Lipusch, N.; Ebel, P. & Leimeister, J. M. (2017): Digitizing Knowledge Intensive Service Systems: The CrowdServ Project. In: AIS SIG Services Pre-ICIS Workshop. Seoul, South Korea.

## **Digitizing Knowledge Intensive Service Systems: The CrowdServ Platform**

Many internet start-ups such as Uber, Snapchat, Spotify, and Facebook are gaining major successes and quickly disrupt whole industries. Yet, many digital ventures fail. One reason for this is that entrepreneurial actors in the context of early stage start-ups face levels of extreme uncertainty when developing their opportunity (Alvarez et al. 2013). Thus, business incubators emerge as institutions that build up complex service systems consisting of investors, mentors, consultants, developer etc. to set up a protective environment for the development of new ventures (e.g. Cohen and Hochberg 2014). Such incubators are often publicly funded and affiliated to universities and research institutes or take shares of the supported companies. To participate in a business incubator, entrepreneurs must apply for admission and are selected through a desirability and feasibility assessment of the incubator team. Consequently, business incubators are frequently highly specialized on distinctive industries (e.g., Fintech) or technologies (e.g., Blockchain). The service provision ranges from infrastructure such as co-working spaces, shared resources, business support, and access to networks. Being part of a business incubator accelerates the success rates of early stage start-ups. The most common knowledge intensive service provided for start-ups is business support. In this vein, business incubators help entrepreneurs through coaching, training, developing their business models and learning. Coaches and mentors in the business incubator attempt to help the early stage start-up team to gain problem-solution fit by conducting one-to-one support initiatives such as workshops and offer entrepreneurs methods to continuously develop their idea into a novel venture. Moreover, business support is offered through marketing support, market research, basic business support etc. Moreover, incubators function as a boundary spanner (e.g., Ferrary and Granovetter, 2009) to provide entrepreneurs with access to external actors that are relevant for start-up maturity. Incubators create a strong network around their efforts to connect entrepreneurs with potential customers (which is especially crucial in the B2B context), suppliers, technology partners, business angels, and institutional investors. This is a valuable service for entrepreneurs in early stage start-ups, as these start-ups frequently struggle to get access to such networks.

One theoretical perspective to explain and structure such complex systems such as incubators or accelerators that consist of a huge network of mentors, investors etc. is the standpoint of service systems (Maglio et al. 2006). This concept is based on the service-dominant logic, which gains increasing popularity among researchers in multiple fields as well as practitioners and constitutes the exchange of service as foundation of value creation through collaboration and contextualization (Vargo and Lusch 2006). In this vein, service systems represent complex and interrelated socio-technological systems that allow the co-creation of value. Such service system consist of a configuration of both actors (e.g. mentors or investors) and resources (e.g. knowledge and skills, technology) that are bound together through a value proposition (e.g. supporting startups) to co-create mutual value for all involved parties (Böhmman et al. 2014). For the context of our research this means that startup support mechanisms such as accelerators or incubators involve actors like startups and mentors to exchange resources to co-create value. This becomes obvious as both parties have their individual interest in working together but are both aiming at accelerating the growth of a venture in search of future returns. Service systems engineering thereby provides three major levels of designing systems that enable the co-creation of value among different stakeholders. First, the engineering of service architectures, which describes the value proposition of a service system into a set of actors, resources, and value co-creation activities. Second, the engineering of service system interactions that defines how and why actors interact to co-create value. And third, the design of resource mobilization focusing on how resources are accessed and exchanged within the service system (Böhmman et al. 2014).

We, thus, conceptualize entrepreneurship support mechanisms such as accelerators as service systems that defines a configuration of actors and resources guided by the four main value proposition selection, matching, online mentoring, and scouting. The increasing importance of knowledge intensive support services for new ventures requires the digitization of such service systems. While traditional offline incubators are constraint by local networks, limited resources and a lack of experts for each domain, the digitization of knowledge intensive service systems provides great advantages.

The aim of this research is to digitize knowledge intensive service systems. Such service systems should support early stage entrepreneurial efforts by connecting multiple mentors, investors and entrepreneur through an online platform to jointly co-create value and provide services such as online mentoring,

selection processes, startup scouting, and matching. To reach our aim, we follow a design science approach to develop an artefact that solves a real-world problem. To combine both relevance and rigor we use inputs from the practical problem domain (relevance) with the existing body of knowledge (rigor) for our research project (Hevner 2007). We therefore use knowledge from previous research on knowledge intensive service systems in the startup context, as well as practical insights, to develop principles for an IT artefact that instantiate a prototype version and evaluate it in focus group workshops. To ensure the practical relevance as well as generalizability of the problems and a corresponding solution we analysed the service provision of accelerators and incubators and its limitations during service provision we conducted a series of expert interviews with executives at business incubators and accelerators (n=27), entrepreneurs (n=32), and mentors (n=16). This approach allowed us to justify the research gap in practical relevance before designing an artifact. Finally, we conducted eight focus group workshops with mentors, executives at incubators and corporate accelerators, and entrepreneurs (2-4 participants). The instantiated artifact was explained to the participants and demonstrated by a click-through to assess its effectiveness, efficiency, and fidelity with the real-world phenomenon (Sonnenberg and vom Brocke 2012). Based on previous theoretical work, we propose the digital knowledge intensive service system *CrowdServ* that provides business incubators and accelerators with the opportunity to overcome their limitations and digitize their service portfolio. Our research then will provide a design theory that will serve as a blueprint for policy makers in entrepreneurship to develop similar solutions in the future (Gregor and Jones 2007).

Our intended contribution is twofold. First, our research will provide prescriptive knowledge that may serve as a blueprint to develop similar digital knowledge intensive service system in the future (Gregor and Jones 2007). So far, we propose preliminary prescriptive knowledge about form and function (i.e. design principles) as well as principles of implementation (i.e. our proposed implementation). This contribution is in contrast to previous contributions in the field of entrepreneurship that focus on explanatory or descriptive knowledge. Second, we contribute to research on entrepreneurship support mechanisms such as business incubators (e.g. Bruneel et al. 2012) and accelerators (e.g. Cohen and Hochberg 2014) by offering a novel and innovative approach to overcome the limitations of current practice.

## References

- Alvarez, S. A., Barney, J. B., and Anderson, P. 2013. "Forming and exploiting opportunities: The implications of discovery and creation processes for entrepreneurial and organizational research," *Organization Science* (24:1), pp. 301–317.
- Böhmman, T., Leimeister, J. M., and Möslin, K. 2014. "Service-systems-engineering," *Wirtschaftsinformatik* (56:2), pp. 83–90.
- Bruneel, J., Ratinho, T., Clarysse, B., and Groen, A. 2012. "The Evolution of Business Incubators: Comparing demand and supply of business incubation services across different incubator generations," *Technovation* (32:2), pp. 110–121.
- Cohen, S., and Hochberg, Y. V. 2014. "Accelerating startups: The seed accelerator phenomenon," .
- Ferrary, M., and Granovetter, M. 2009. "The role of venture capital firms in Silicon Valley's complex innovation network," *Economy and Society* (38:2), pp. 326–359.
- Fitzsimmons, J. R., and Douglas, E. J. 2011. "Interaction between feasibility and desirability in the formation of entrepreneurial intentions," *Journal of Business Venturing* (26:4), pp. 431–440.
- Gregor, S., and Jones, D. 2007. "The anatomy of a design theory," *Journal of the Association for Information Systems* (8:5), p. 312.
- Hevner, A. R. (2007). A three-cycle view of design science research. *Scandinavian journal of information systems* (19:2), pp. 4.
- Lusch, R. F., and Vargo, S. L. 2006. "Service-dominant logic: reactions, reflections and refinements," *Marketing theory* (6:3), pp. 281–288.
- Maglio, P. P., Srinivasan, S., Kreulen, J. T., and Spohrer, J. 2006. "Service systems, service scientists, SSME, and innovation," *Communications of the ACM* (49:7), pp. 81–85.
- Sonnenberg, C., and Vom Brocke, J. 2012. "Evaluations in the science of the artificial—reconsidering the build-evaluate pattern in design science research," *Design Science Research in Information Systems. Advances in Theory and Practice*, pp. 381–397.
- Soukhoroukova, A., Spann, M., and Skiera, B. 2012. "Sourcing, filtering, and evaluating new product ideas: An empirical exploration of the performance of idea markets," *Journal of Product Innovation Management* (29:1), pp. 100–112.