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# International Workshop on Software-intensive Business: Start-ups, Ecosystems and Platforms (SiBW 2018)



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# Preface

The very first International Workshop on Software-intensive Business: Start-ups, Ecosystems and Platforms (SiBW 2018) was held in Espoo (Greater Helsinki), Finland on December 3rd, 2018 – just a day before SLUSH 2018, the world's biggest startup event. Thanks to the collaboration with the organizers of SLUSH, many of the software-intensive business researchers and practitioners took part also in this event.

The international workshop gathered together 35 registered attendees, from Sweden, Germany, Latvia, Finland, Italy and the Netherlands representing both academia as well as industry. The event itself was sponsored by VTT Technical Research Centre of Finland and the workshop was organized by the newly founded Software-intensive Business research community (c.f. [1]) together with Software Startup Research Network (SSRN)[1].

This year's workshop consisted of 19 workshop papers and a seminal keynote. All papers submitted to the workshop were reviewed by at least two members of the program committee and the papers were selected according to their suggestions. As always, our sincere thanks go to the reviewers – in total, the 57 review statements contained nearly 28,000 words. We are thankful to the members of the program committee for the time and passion they have put into giving useful advices on how to improve the papers.

As a result, the workshop presented a broad view on the recent development in the field of software-intensive business within the selected focal areas. All in all, the program committee highlighted four themes across the papers: *startups*, *new product development*, *business models* and *ecosystems*. These categorizations give an interesting vantage point to the ongoing debate in the field of software-intensive business. Our discussion generally focuses on new venture creation, value creation and value capture — themes much researched but still lacking in software specific explanations. This set the tone of this year's workshop.

*Software startups.* The workshop day was opened by Jason Grendus with his keynote presentation titled *"Business Angel Mindset"*. In his presentation, Grendus shared his experiences on working with, and as one of angel investors.

Klotins [2] continued the theme by asking the question *"...[A]re start-ups snowflakes?"* The work made an effort to understand if, and to which extent, software startups are unique in how they approach software engineering. Klotins [2] took a narrow view of engineering; we can of course ask the same question more broadly: How unique are software-intensive business and to which extent it warrants its own research. Much of the workshop actually focused on just this, highlighting the software specific undertones in the broader understanding about business, management, and engineering.

[1] https://www.softwarestartups.org

Kemell et al. [3] showed through a grey literature review over a hundred metrics for software startups. Many of these make sense in a broader analysis of business and engineering, but some show clear specificity on understanding software-intensive business. Khanna and Wang [4] presented a framework on how startup teams could utilize experience-based learning in their work.

Software-intensive business, particularly through platforms, is a low entry barrier business driven by minimum viable product experimentation. This has many research implications. It highlights the importance of education on new venture creation. Gutbrod and Münch [5] look at teaching lean startup principles and in particularly how entrepreneurs can identify core assumptions in a fast-paced business environment. In the same line, Chanin et al. [6] looked at how software startup education impacts the success or failure of startups.

Yrjönkoski and Suominen [7] studied effectuation as a frame for network decisions in a software startup. Their results show that effectuation behaviour might be an useful approach for managers in the early fuzzy phases of a startup. In addition, they point out avenues for further work on the concept of effectuation.

*New product development.* The field of software-intensive business is tightly intertwined with the actual development of software artifacts. To foster the development of the field, Schönhofen et al. [8] address in their paper how the ISO 16355 standard can be used to support the development of the software-intensive field. The standard, which is based on Quality Function Deployment (QFD), seems a promising starting point for future work.

With a similar focus, Saltan et al. [9] identified new research directions for software product management based on a case study focusing on five software-intensive companies. Melegati & Wang [10] focused their understanding on how software startups innovate in the dynamic market, finding that literature did not differentiate startups based on the innovations they develop, leaving much for further research to uncover. Münch et al. [11] addressed, in their study, the problems of the traditional roadmapping in a software-intensive company. They conclude that the traditional approach is not suitable anymore in agile and innovative environments.

Bosch et al. [12] identified, from their empirical material, three different approaches to the software development: Requirement-driven, Outcome-driven and AI-driven development approaches. Their study presents a new and interesting way to characterize software development work in companies. In addition, Bosch et al. [12] provided a framework for deciding when and what approach to use.

*Business models.* As the field of software-intensive business aims to cross the gap between technology and business, also business models were strongly present in the workshop. Spijkerman and Jansen [13] presented a survey on ten open-source software companies' business models and summarize their key findings as an open-source software business model blueprint.

Saltan and Seffah [14] presented a mapping study for identifying the technical and business challenges of SaaS adoptions. As a result, they present a framework for identifying the challenges and required a formation of a research agenda.

Yrjönkoski [15] continued the same line of research by surveying literature on how small-and-medium-sized enterprises (SMEs) should organize the transformation from on-premise products to SaaS solutions. His results show, that while results from large enterprises with enough time and resources have been presented, there is a lack of work reporting how SMEs have carried out the transformation with fewer resources.

*Ecosystems & platforms.* Also software ecosystems and platforms were presented in the workshop. Molenaar et al. [16] studied how partners perceive the keystone's power in a software ecosystem. Their study reveals new insights in partner-keystone dynamics in the software ecosystems. Joelsson et al. [17] continued the same approach and went on to highlight the active role of *prosumers* — "users who consume as well as produce" — in the studied software ecosystem. This type of actors is specific to digital environments and their role is understudied.

Petrik and Herzwurm [18] studied industrial Internet of Things (iIoT) platforms and based on the interviews, they present a business model taxonomy for iIoT platforms. Hajikhani [19] focused on social media platforms and entrepreneurial discussions in smart cities. By focusing on the case of London, his study advances our understanding on social media's impact on an innovation and entrepreneurial ecosystem.

Turunen and Mäntymäki [20] observed a lack of understanding of psychosocial dynamics in ecosystem studies. They use the concept of *collective consciousness* as a tool for characterizing the ecosystems as complex networks of heterogeneous actors. Their study works as an interesting opening to ecosystem scholars to widen the approaches used to understand the complex phenomenon.

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