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Creating Business Model Canvases with a Collaborative Mobile Application

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Abstract. Business models are important for both start-ups and established companies because they form the basis for a company's success by outlining their key factors. Business models can be created and documented in several ways. We focus on Business Model Canvases (BMC) and present *MobiLean*, a mobile application for the collaborative creation of BMCs. *MobiLean* is an easy and interactive smartphone app for groups of varying size in mixed-focus collaboration scenarios. We apply mobile-based interactions for the ease of use and the support of the creativity process. We contribute to the field of CSCW by providing a mobile application for the domain of co-working and aim to demonstrate how *MobiLean* supports creating, revising, and documenting BMCs.

Introduction and Related Work

Business models are important artifacts in business development both for start-up companies to orient themselves and to receive funding and for established companies to describe their key factors. Creating and documenting business models is necessary to ensure a company's sustainability. A template that can be used for this purpose is the Business Model Canvas (BMC)[1]. A BMC consists of nine so-called building blocks and describes value propositions, customers, finances, and infrastructure. BMCs help to structure and evaluate business strategies and to get new ideas, e.g., for increasing efficiency of business processes. The usage of BMCs is

[1] For example provided by Strategyzer AG: https://www.strategyzer.com/canvas/

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growing and widespread across different domains, e.g., agriculture (Dudin et al., 2015) or retail industry (Zolnowski et al., 2014), and with different purposes, e.g., as analytic tool for government (Ramlan and Hasibuan, 2018) or for risk assessment (Proença et al., 2015). Usually, building blocks are filled by a companies' management, leading employees, or other involved parties in collaborative sessions. To create BMCs the majority uses analog tools, especially sticky notes and pens. Group members fill building blocks in a specific order by writing their thoughts on sticky notes, discussing them, and putting them on a large sheet of paper or a board. Normally, such discussions need more than just one meeting and, therefore, have to be resumed. For preparing follow-up sessions efficiently, building blocks are assigned to different group members for further processing. As a result, already created entries of building blocks need to be distributed within the group. This way of working collaboratively as well as individually to reach a common goal is called mixed-focus collaboration (Gutwin and Greenberg, 1998). Although, working analogously is easy to perform, content often gets lost or into disorder during distribution, which impedes further processing. A direct digital creation instead enables sharing building blocks easily and enhances further editing as well as permanent documentation. Current approaches for creating BMCs digitally include desktop tools that adapt the sticky notes metaphor (Fritscher and Pigneur, 2010) and web-based tools optimized for desktop and tablet screens (e.g., *Canvanizer*[2]). They both focus on creating BMCs digitally but lack collaborative editing or sharing. The mobile app *And Voil'App*[3] aims to document analog BMCs with smartphones but without the creation process itself. Although, these tools address direct digitization of BMCs with different devices they do not address useful collaborative work in terms of mixed-focus collaboration. This includes not only creating but also sharing and merging activities for digital content (Kühn and Schlegel, 2018). Furthermore, the tools lack intuitive interactions for a seamless integration into collocated groups. We present a mobile application for creating, discussing, and sharing business model canvases within collocated groups. The tool aims to support the creation by utilizing standard smartphones, providing intuitive and easy-to-use interaction techniques, and addressing the relevant activities for creating BMCs extensively.

Collaborative Creation of BMCs with MobiLean

MobiLean is a mobile application that uses smartphones without further equipment to enable users to collaboratively create and share BMCs (see Fig. 1). It aims at supporting the direct and digital development as well as the location-independent creation of BMCs due to smartphone usage. Furthermore, it overcomes disadvantages of presented work concerning working simultaneously on different building blocks and the integration of devices into collaboration. *MobiLean* includes several

[2] https://canvanizer.com/
[3] http://www.andvoilapp.com/

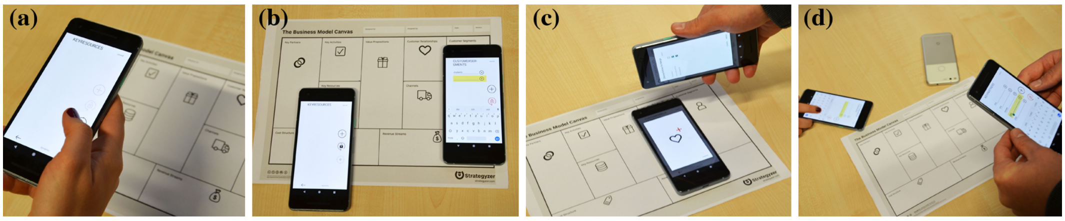

Figure 1. Collocated use of *MobiLean*: (a) Initiate collaboration by detecting blocks, (b) edit and highlight entries, (c) share and merge content using *Pour to Compose*, (d) select content for moving.

mobile device-based interaction techniques for collocated mixed-focus collaboration (Kühn et al., 2016). These interaction techniques enhance the interactivity of the creation process and increase user experience (UX) due to their spatiality and tangibility described by Korzetz et al. (2019). They further aim at simplifying the usage of mobile apps by reducing complex text input and utilizing gestures that are based on everyday actions. To work with *MobiLean* collaboratively, one group member creates a new BMC project or opens an existing one as host of a session. Hosts can invite a various number of group members to join the session while they, in turn, can connect to the host device and the respective project. Connection is established with an API that builds upon the Nearby Connections 2.0 API. Group members can either create entries together or split up the building blocks among each other according to mixed-focus collaboration. In order to edit building blocks, a particular block can be selected and locked. For selecting, the group members can open the BMC template digitally, print it, or draw the icons of the blocks on a board or a piece of paper. By holding the smartphone above the particular icon, the device detects the block (see Fig. 1a) using image recognition. Then, the block can be locked for individual editing (see Fig. 1b) by tapping on a locking button. Switching between several blocks works similarly. To edit blocks simultaneously, they can be forked. Forking enables individual users to edit a block independently and merge created content later with entries of other group members during a joint discussion. Joint decisions lead to higher acceptance within the group. Another advantage of forking a block is that entries of others cannot be deleted by mistake. For executing a merge of several blocks, *MobiLean* utilizes the interaction technique *Pour to Compose* by Korzetz et al. (2016) (see Fig. 1c). Selected entries from different group members can be merged to complete blocks. Furthermore, entries can be easily copied and pasted into other blocks by performing a tilt interaction (see Fig. 1d). Thereby, *MobiLean* provides a high level of functionality for an easy and collaborative creation of BMCs.

Conclusion and Future Work

We presented our mobile application *MobiLean* that helps to create Business Model Canvases digitally using conventional smartphones. *MobiLean* applies mobile device-based interaction techniques that are easy to learn and to perform to facilitate the creation of BMCs. Using such interaction techniques enables users to focus on the content (the business model), the resulting discussions, and the overall social interaction instead of struggling with the usage of a device. Further steps comprise user evaluations of the current version concerning its integration and UX and implementing additional functionality to address mixed-focus collaboration.

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