

Canvas as Tools for Digital Platform Design: Analysis, Comparison and Evolution

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Abstract. Canvas have for long been embraced as a popular design tool. Initially aimed towards, business model development, the model of a one page, visual and collaborative tool has spread to the design of many different artifacts. Digital platforms, with its conjugation of business, technical, and social facets have benefited from the canvas model for its design practices, from both scholars and practitioners. Nonetheless, the recent push for more industry-specific and holistic digital platform research agenda is bound to have an impact in the tools used for platform design. In this paper, we apply a literature review method to examine existing canvas, inspired by the Business Model Canvas, as tools for the design of digital platforms. Using conceptual platform design research as a frame of reference, we review eight canvas specific for digital platform design, highlighting four critical limitations in their application regarding (1) adopted broad platform conceptualizations; (2) a restricted focus on business elements; (3) a lack of focus on platform evolution; and (4) a lack of guidance in the translation of canvas to explicit platform design propositions and requirements. By addressing these limitations, we set a path for the evolution of canvas as collaborative tools that can better support the more comprehensive and nuanced approaches required for the design of digital platforms acting in an evermore non-linear, volatile, uncertain, complex, and ambiguous environments.

Keywords: Digital Platform · Business Model Canvas · Digital Platform Design

1 Introduction

Canvas tools have emerged as a powerful and versatile approach for system design. Inspired by the Business Model Canvas (BMC) developed by [18, 19], these tools help in translating abstract and conceptual design exercises into visual collaborative ones, encouraging a powerful non-sequential exploration of information [16, 27, 36]. Acting as boundary objects that enable a low-resource conceptual prototyping process and foster communication and knowledge sharing while ensuring stakeholder alignment during design processes [36, 38], the BMC serves multiple functions: it allows for the documentation of existing business models, facilitates the design of new models by providing a

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framework for experimentation, challenges existing assumptions, and supports the communication of complex ideas in a clear and concise manner, thus enhancing collaboration and shared understanding.

Digital technologies are an important support and mediator for interactions in collaborative networks [3], with platforms, in particular, being placed at the center of these networks. Digital platforms, a research topic since the 1980s, is a term used to describe a framework across various fields of study and market sectors [12, 14]. Across the decades, different streams of research have studied platforms for how they enable and are driven by network externalities of twosided markets [29], for how platforms rely on collaboration in order to thrive [26], for how the platform model has become the foundation for new forms of interaction and collaboration opportunities [4, 17] and how information asymmetries are driving platforms into taking over many of the business-to-consumer markets with no end in sight [21], how its technical and governance components are intrinsically connected [35], and, more recently, into how organization and sociotechnical considerations play an important role in the design and development of platforms for more specialized environments such as in the case of business-to-business platforms [5, 14]. Throughout the evolution of the digital platform (DP) concept, design and development processes for platforms have also evolved significantly, with [31] survey of the literature pointing to eight core concepts critical to platform design: the roles within a platform and its ecosystem, pricing and revenue sharing models, the developed boundary resources and the level of control and openness exercised by the platform owner, the technical and competitive designs and the trust that the platform is able to generate from its user base (and even among the user base itself.) However, the operationalization of these design concepts into successful platforms has mostly been left to practitioners.

The widespread adoption of the BMC has spurred the development of various adaptations, such as the Value Proposition Canvas and the Service Model Canvas [36]. However, many of these adaptations have emerged in an ad-hoc manner, lacking standardized definitions and best practices [38], raising questions about their effectiveness and application consistency. Realizing its potential, scholars and practitioners have, however, adopted the one-page canvas model for a wide range of tasks [38], and the design of digital platforms is no exception. Thus, the main objective of this paper is to analyze canvas as tools developed and leveraged for the platform design space, describing its positioning within current digital platform research. The research questions thus become:

- RQ1: How have canvas been designed to support digital platform design and development processes?
- RQ2: How do these canvas designs align with current literature on digital platform design?

Using conceptual platform design research of [6, 13, 20, 31, 34, 35] as a frame of reference, in this study, we conduct a comparative analysis of eight canvas tools drawn from both research projects and commercial offerings. We use this review to highlight the current limitations of the analyzed tools, specifically for the design of platforms acting in industry-specific environments.

Given the widespread use of canvas tools in both academic and corporate settings, our findings offer significant insights to enhance current platform design processes and contribute to developing a more robust framework for designing new digital platforms. The paper is structured as follows. Section 2 describes the adopted research design, highlighting the canvases considered for this study and the attributes used for comparison. Section 3 starts by providing an overview of the conducted analysis and condenses in Subsect. 4 the four key limitations that emerged. A concluding section summarizes the study, providing insights into its limitations and future work.

2 Research Design

The call for research into the transformative and disruptive impact of digital platforms has long been established by various scholars [6, 14, 21]. Despite recognizing the crucial interplay between technical architecture, organizational services, business models, and governance for platform design, there remains a significant gap in studies that integrate these elements. [14] identifies this deficiency and proposes a holistic research agenda for digital platforms. In this review, the author highlights four primary shortcomings: (1) an excessive focus on technical and economic factors at the expense of organizational dynamics; (2) a prevailing emphasis on successful case studies, which skews the understanding of platform governance and planning, initially noted by [6, 37]; (3) a tendency to overlook the diverse stakeholder network involved in platforms, often prioritizing platform owners and ignoring broader network dynamics; and (4) a lack of research on structural and competitive aspects, such as platform openness and the integration of complementors. Addressing these issues is crucial for advancing our understanding of DPs and better informing platform strategies.

The BMC as developed by [18, 19] is formed by a visual chart divided into nine sections, each representing a key aspect of a business model: customer segments; value propositions; channels; customer relationships; revenue streams; key resources; key activities; key partnerships; cost structure. Designed for simplicity and flexibility, the BMC encourages a collaborative and hands-on process. While many variants of the BMC have been developed since its initial release, its main tenants remain constant: a canvas is, firstly, a visual tool subdivided into a set of components that can be activities, actions, or systems. Many of the canvases also adopt the idea of a process or flow, meaning that the contents of one of its subdivisions directly influence one or many of the others. In the following sections, we describe our canvas selection and analysis process.

2.1 Canvas Selection

As previously mentioned, the popularity of BMC led many scholars and practitioners to develop a canvas to target specific systems. [36] highlight more than seventy-five, with a subset of twenty-five already considering business and technical systems. For this study, and per the objectives and research question, we reviewed scholarly and web sources for canvas tools targeted specifically to platform design processes. These two types of sources are necessary because, as pointed out by [36], a considerable number of canvases are developed by practitioners with no research publication attached to them. In fact, the "Platform Design Toolkit," one of the more prevalent results, cited in multiple research papers ([11, 15, 24] as three examples) is a project developed by practitioners, backed by an ongoing commercial offer that is not directly attached to any research stream. On

the other hand, canvas designed towards systems design in a more broad sense, such as the "Design System Canvas" [7], were not considered as they fail to meet the criteria of being specific for platform design. In sum, this survey revealed a group of eight canvases, a summary of which can be found in Table 1.

Title	Year	Organization	Papers
1. Business Model Innovation with Platform Canvas	2019	N/A	[32]
2. Digital Platform Canvas	N/A	ICSB	[30]
3. The Platform Canvas	2019	The Platform Canvas	[1]
4. Multisided Platform Design	2023	Strateegia	N/A
5. The Platform Business Model Canvas	2019	Platform Generation	[8-10]
6. Platform Design Toolkit	2013	Boundaryless	N/A
7. Platform Innovation Kit	2012	Platform Innovation	N/A
8. Two-Sided Platform Business Model Innovation	2000	N/A	[33]

Table 1. List of considered canvas

It's important to note that two of the projects, the Platform Design Toolkit and Platform Innovation Kit, are multi-canvas tools (15 and 25, respectively) that cover different stages of design using different canvases. The entire set of canvases was considered for analysis, as both projects portray these sets as complementary.

2.2 Analysis Attributes

Similarly to a literature review process, an in-depth analysis is required to synthesize the gathered information after identifying and screening artifacts. To analyze each of the eight selected canvases, we took into consideration not only the canvases themselves (the visual tool) but also all information available on the website of the canvas (the main channel used for the sharing of these tools) regarding its use methodology and development rationale, the research papers associated with them, and, if available, some application examples available in the literature. This provided us an ample perspective of these tools that, for many, give insight into how they are developed, their over-time iterations, their commercial offerings, and how they are employed by researchers and practitioners.

Furthermore, to characterize and compare the canvas a set of attributes were defined based on both the previous work of [36] in comparing canvas based on the BMC, and specific elements of digital platform design. The proposed attributes range from high-level characterization to operationalization and systems-related attributes. A listing and description of all the attributes are shown in Table 2.

In the next section, we use this set of attributes to characterize and compare our canvas corpus.

Attribute	Description
Title	Title of the canvas
Goal	Description of the problem being addressed by the canvas
Perspective	Perspective adopted to use the canvas
Fields	Number of fields in the canvas
Generalization	The canvas focuses on a specific or multiple typology of platforms
Unit of analysis	Are technical, business, and organizational perspectives of platform design considered
Elements	What platform design elements are represented. From value proposition, complementor and ecosystem mappings, business model, evolution, and governance strategies
Life cycle	What phases of a platform life cycle are represented. From conceptualization, design, development, operation/use to decommission
Evolution perspective	The canvas represents the platform at a static development point or its evolution over time
Process	The canvas suggests a sequence of steps or a process for its use

 Table 2. Attributes for assessing and comparing canvas adapted from [36]

3 Canvas for Digital Platform Design

A common objective across the analyzed canvas landscape is clear: provide support for digital platform design and development activities, in line with the tool selection process outlined in Sect. 2. Similarities also extend to the positioning of the platform owner in the designer role (with only a few adopting other perspectives) and the focus on the business analysis perspective. Exceptions to these are the "Platform Business Model Canvas," "Platform Design Toolkit," and "Platform Innovation Kit," which stand out by incorporating a user's viewpoint (as suppliers, consumers, and complementors) during specific phases and developing some technical and organizational considerations these are not the focus, with the Platform Design Toolkit" and "Platform Innovation Kit" pointing to these considerations as ones currently in development. A dominant business perspective that emphasizes the development of the platform business model, value propositions, network effects, and governance considerations is still prevalent and guides many of the tool design choices.

On the other hand, the level of detail and complexity is one of the first noticeable differentiating factors in the analyzed canvas, with two groups becoming apparent. While the "Platform Design Toolkit" and the "Platform Innovation Kit" are structured in sets of canvases (15 and 25, respectively) to try and capture not just platform design activities but also the entire platform life cycle, the remaining tools are condensed in single-canvases with the number of fields ranging between 8 and 33. For the singlecanvas tools, the number of fields is directly related to the tool's adopted perspectives, with canvases that adopt platform stakeholders' perspectives being more complex. In the "The Platform Business Model Canvas", as an example, the canvas has the user adopting the "owner," "consumer/buyer/implementor," "provider/seller/supplier/contributor," and "partner" roles, to describe interactions between these, main value propositions, resources, leading platform tractors, and detractors, among others.

It's also important to note that every analyzed canvas broadly characterizes the platform as a multisided enabler of digital marketplaces. Informed by [19] BMC and its focus on business model development, this perspective allows these tools to be flexible and fit the design and development of platforms for many market sectors. On the other hand, this broad approach might mean that design requirements for more specialized types of platforms might be missed. In fact, [36] posit that the proliferation of canvas based on the original BMC arises from practitioners' inability to find and adapt existing canvases that express their perspectives of how to represent and conceptualize different systems. With the recent literature on industrial platforms that have focused on how their specific characteristics (in contrast to business-to-consumer platforms) call for improved design processes [13, 23], these broad perspectives may, in fact, prove not to be efficient design tools.

How these tools tackle the different stages of platform design and life cycle stages also varies. As alluded to before, the multi-canvas tools define sets of canvases specifically to tackle these different stages of development and evolution. Both tools divide this process into five stages that, despite using different, stylized designations, cover:

- Definition of platform vision and objectives;
- Exploration of market space for competitors and funding opportunities;
- Development of prototypes to validate the core vision and technical systems;
- Ecosystem bootstrapping and outreach; and
- Growth and evolution over time.

Each phase encompasses a series of canvases to guide users through various activities.

Both multi-canvas tools offer extensive documentation, including user guides and examples. With the exception of the "Business Model Innovation with Platform Canvas" and the "Digital Platform Canvas," all canvases analyzed provide supplementary documentation and commercial services to assist organizations in these processes. Single-canvas tools provide documentation that contextualizes the different canvas fields and their interactions. In contrast, multi-canvas tools, and the more advanced commercial offerings like "The Platform Canvas", offer more comprehensive methodological support, aiding in the selection of relevant canvases for each of the phases.

This distinction between the canvas backed by more robust commercial offerings is also apparent in how the canvas incorporates a DP evolution perspective. While the tools backed by commercial offerings provide design perspectives that go beyond design phases to define metrics and strategies for business model evolution in the medium and more long-term time frames (in terms of the literature of DP that point to the necessity of platforms to evolve and re-shape over time [35]) others fail to do so by focusing only on the initial stages of the design process.

Figure 1 provides a visual representation of the comparison between the life cycle perspectives and units of analysis adopted by the analyzed canvas, with the lines high-lighting the continuity found between these stages and units of analysis. As an example, from the vertical axis we can say that canvas number 4, "Multisided Platform Design",

describes the conceptualization phase in business, technical and organizational perspectives, while canvas 8, "Two-Sided Platform Business Model Innovation", only looks at this stage from a business and technical perspective. From the horizontal axis, we can say that both Canvas 6 and 7 use an organizational perspective to base their conceptualization and operation design tenants. This visualization makes the distinction between single and multi-canvas tools even clearer. While the single-canvas tools are all focused on the conceptualization phase of platform development, with only three considering more than a business perspective, the two multi-canvas tools analyzed span all units of analysis for the conceptualization phase, the business and technical perspectives of the design phase, the business perspective of the deployment phase, and the business and organizational perspectives of the operation phase. Again, this points to the maturity of these tools as commercial offers and their complexity. It's also important to note that none of the canvases covers the later stages of the platform life cycle. While it is expected for these tools to focus on the earlier stages of development, later stages are crucial to understand when the need to transform and evolve arises [35].

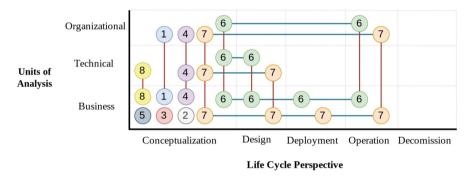


Fig. 1. Canvas comparison: Life Cycle Perspective Vs Units of Analysis

In sum, we could highlight the considerable differences in process and scope in the analyzed canvas tools. The ones with a broader range of canvases and fields are better able to provide full life cycle coverage (e.g., "Platform Design Toolkit" and "Platform Innovation Kit") at the cost of complexity. These are likely more suitable for platform owners looking for comprehensive tools that assist throughout the entire platform development process and even in operation. Canvases that focus exclusively on the conceptualization phase (e.g., "Digital Platform Canvas") while providing a much narrower scope might be appropriate for users at the initial stages of platform development who require a tool to center the initial activities of vision and core value proposition definitions. Overall, selecting a particular canvas would depend on specific needs regarding the platform's complexity, the development stage, and the desired balance between business, technical, and organizational considerations.

In the next sections, we discuss the shortcomings of the analyzed tools and set out an initial set of principles to guide the development of a new tool to support more focused platform design processes.

4 Towards a New Platform Design Process

Despite the coverage provided by the canvas tools analyzed in the previous section, four key limitations become apparent. Table 3 provides an overview of these limitations, a mapping of the canvas that portrays these deficiencies, and describes some possible research directions and questions to tackle these.

Broad Platform Conceptualization. As previously described, all the analyzed platforms adopt a general perspective of the platform as the core element of a multi-sided marketplace of (interchangeable) customers and suppliers, additionally integrating features by third parties (complementors) to enhance the platform's base features and value proposition [6, 34]. While this conceptualization has for long been accepted and used by both scholars and practitioners, its generic nature leads these canvas tools to implement design processes that, in some cases, may not fully apply to specific contexts or, in other cases, might lead to design requirements that don't fit intended user-bases.

Limitation	Canvas	Research Directions
Broad platform conceptualization	All	 Development of scope, market/industry, and stakeholder aware platform design tools that allow owners and developers to fully capture the specificities of platform specific contexts How do scope, market, and/or stakeholder specificities impact the development processes of digital platforms? What is the ideal degree of conceptual specificity that should be used in platform design processes?
Restricted focus on business elements	2, 3, 5	 Development of tools that further take into consideration the organizational aspects when defining architecture and governance strategies What is the ideal balance between units of analysis in different platform design stages and platform life cycle? How do scope, market, and/or stakeholder specificities impact the units of analysis during platform design processes?
Lack of focus on platform evolution	1, 2, 5, 8	Development of mechanisms that give platform owners visibility into the platforms' evolution and transformation needs/potential – How can platform design tools support medium to long term transformation processes?
Lack of guidance in canvas translation	All ^a	Development of support tools to translate tools' outputs into actionable design requirements – How can outputs of design tools and methods be effectively translated into requirements?

Table 3. Summary of revealed limitatio
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^aCanvas 5, 6, and 7 provide this support as a commercial offering

Following suggestions made by recent studies [6, 13], different contexts require different platform conceptualizations leading to different design approaches. In their study [13] point to how platforms acting in B2B environments are characterized by a low appetite for risk and a higher level of privacy, that the success of these platforms requires alignment of strategic priorities within the traditional supply chain partners and that the winner-takes-all phenomenons that have permeated B2C platforms do not seem to have such an impact. These characteristics, specific to this subset of platforms, should have an important impact in all stages of platform design and evolution. Thus, we advocate that new iterations of these tools adopt more concrete platform conceptualizations according to their scope, market/industry, and stakeholders.

Restricted Focus on Business Elements

Evolving from the Business Model Canvas by [18, 19], all the analyzed tools adopt a business perspective by default. While this is to be expected, all the architectural and organizational components of platform development should be no less important. As described by [14], a restrictive focus in platform literature is also found in the wider literature, which mostly focuses on its technical and business aspects [14, 28].

In a subject where architecture and governance are so intertwined, with [34] visualizing them as two interlocking gears, it is required to consider all levels of analysis to develop artifacts that deliver on the required features to allow for the implementation of the platform governance tenants while advancing the governance structures that guide the technical and infrastructural elements of the platform. Furthermore, with the preponderance of network effects and the development of a thriving ecosystem for platform success, the organizational element is essential to understand what social challenges enhance and inhibit actors from adopting and using platforms. The field of socio-technical systems has long been developing these aspects [2, 14, 22, 25], and we advocate for including these considerations in platform design tools.

Lack of Focus on Platform Evolution

The preponderance of the business as a means of analysis also informs how these tools portray the platform lifestyle and its evolution perspective. Authors such as [35] have long argued for a short, medium, and long-term perspective for platform evolution that starts by focusing on the development and solidification of the platform's core value proposition, evolves to the opening of the platform boundaries to allow for complementor integration and thus platform value expansion, and, in a long-term perspective, leveraging the use of modular architectures and the plasticity they generate to transform in pace with the changing needs of the ecosystem of users and complementors. From a platform design perspective, these elements should be considered at all stages to ensure that an iterative process is adopted, allowing platform owners to build on past design propositions and requirements to evolve the platform sustainably.

While some analyzed tools encompass a subset of these stages and provide the tools to design the design tenants for these collaboratively, we still find a lack of alignment between the supported life cycle stages and show the tools support defining strategies for platform evolution. In this sense, we advocate for the inclusion of mechanisms that support the development of metrics and strategies to (1) understand when the need to pivot

is reached and what transformation to carry out; (2) define how transformation should implemented in terms of platform architecture and governance strategies (including pricing, control and other relevant governance mechanisms); (3) define the measures that provide visibility into all these processes and measure their effectiveness.

Lack of Guidance in Canvas Translation

Many analyzed tools provide structured processes to support users using the canvases, with the multi-canvas tools providing detailed guides. Nonetheless, details of how a finished canvas, or a set of multiple canvases, are translated into concrete and actionable design propositions and (functional and non-functional) requirements are lacking. While the collaborative processes that these tools incentivize have succeeded in aligning stakeholders and focusing design activities, the lack of support for platform owners and designers for this final process might result in losing essential detail.

A similar issue is found in the multi-canvas tools. While descriptions are provided for the rationale behind each canvas, and a section in the user guides describing how each connects with the remaining canvas (for the same development phase), these are light on details.

For the tools backed by commercial offerings, this component is offered by tool developers as training and consulting services, but nonetheless, this means that it is still up to platform owners and developers to define ad-hoc processes based on these tools. In this sense, we advocate that clear instructions be provided for tool users to allow for a clear translation between canvas outcomes and explicit and actionable platform requirements.

5 Conclusions

This paper explored how existing canvas tools support the design and development of digital platforms with conceptual platform design research as a frame of reference.

To answer RQ1 of how canvases have been designed to support platform design and development processes, we analyzed a set of eight canvases according to attributes drawn from recent digital platform theory. A common theme across all the analyzed tools is their focus on facilitating platform development, with most adopting a business perspective centered on core business model components like value propositions and network effects. However, the level of detail and complexity varies significantly.

Single-canvas tools offer a concise overview, while multi-canvas tools provide a more comprehensive perspective by encompassing the entire platform lifecycle through a series of specialized canvases. This comprehensiveness comes at the cost of increased complexity. Canvases also differ in handling platform design phases and the Digital Platform evolution perspective. Tools backed by strong commercial offerings provide design elements that extend beyond the design phases, including metrics and strategies for evolving medium and long-term business models. In contrast, other tools focus solely on the initial stages of design.

With RQ2, to understand how these canvas designs align with current literature on digital platform design our analysis revealed four key limitations in the reviewed canvas tools: (1) the broadness of adopted platform conceptualization, pointing to how

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existing tools adopt a general view of platforms as multi-sided marketplaces, which may not fully capture the nuances of specific contexts, particularly industrial use cases; (2) the restricted focus on business elements as the bias towards business considerations, neglecting the architectural and organizational aspects that are also crucial for platform development; (3) lack guidance for the iterative nature of platforms, making it difficult to plan for future growth and adaptation; and (4) the lack of guidance in translating the outputs of the canvas tools into actionable design requirements.

In light of these limitations, we propose a future research direction and a set of research questions aimed at developing a new generation of platform design tools that better cater to the specific platform requirements, encompass the complete set of platform units of analysis, and support owners in translating design processes into explicit requirements.

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A Canvas Comparison Table - Part 1

See Table 4.

Title	Goal	Perspective	Fields	Generalization	Units of Analysis
1. Business Model Innovation with Platform Canvas	Tool to support implementation of business model innovation through platform businesses	Platform owner	8	General. Platform as multisided marketplace	A business perspective is dominant. Some organizational aspects are considered
2. Digital Platform Canvas	Platform business model development	Platform owner	17	General. Platform as multisided marketplace	Business perspective
3. The Platform Canvas	Platform business model development	Platform owner	12	General. Platform as multisided marketplace	Business perspective

Table 4. Canvas Comparison - Part 1

(continued)

Table 4.	(continued)
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Title	Goal	Perspective	Fields	Generalization	Units of Analysis
4. Multisided Platform Design	Tool to support the design, deployment and evaluation of multisided digital platforms	Platform owner	10	General. Platform as multisided marketplace	Technical and business considerations are present. Some organizational aspects are also used
 The Platform Business Model Canvas 	Platform business model development	Platform owner and stakeholders	33	General. Platform as multisided marketplace	Business perspective
6. Platform Design Toolkit	Complete set of tools to develop and deploy multisided platforms and marketplaces	Platform owner, ecosystem and stakeholders	15 canvas with 100 + fields total	General. Platform as multisided marketplace. Provides tools to both B2C and B2B focused platforms	A business perspective is dominant. Technical and organizational aspects are considered and in-development
7. Platform Innovation Kit	Complete set of tools to develop and deploy multisided platforms and marketplaces	Platform owner, ecosystem and stakeholders	25 canvas with 100 + fields total	General. Platform as multisided marketplace. Provides tools to both B2C and B2B focused platforms	A business perspective is dominant. Technical and organizational aspects are considered and in-development
8. Two-Sided Platform Business Model Innovation	Tool to support implementation of business model in two-sided markets	Platform owner	22	General. Platform as multisided marketplace	A business perspective is dominant. Some technical aspects are considered

B Canvas Comparison Table - Part 2

See Table 5.

Title	Elements	Life Cycle	Evolution Perspective	Process
1. Business Model Innovation with Platform Canvas	Value proposition to users and owner, network effects, governance considerations	Conceptualization and design	Resilience, in a broad perspective, is considered	No

Table 5. Canvas Comparison - Part 2

(continued)

Title	Elements	Life Cycle	Evolution Perspective	Process
2. Digital Platform Canvas	Major components of platform business model definition	Conceptualization	Not considered	No
3. The Platform Canvas	Major components of platform business model definition, including metric, cost models and monetization strategy definition	Conceptualization and design	Includes the definition of metrics for business model evaluation	Yes
4. Multisided Platform Design	Stakeholder definition and interaction, core value proposition, UI and UX considerations, testing and iteration scenario definition, marketing considerations	Conceptualization, design, development and operation	Defines metrics and strategy definition to enable platform evolution	Yes
5. The Platform Business Model Canvas	Major components of platform business model definition	Conceptualization	Not considered	Yes
6. Platform Design Toolkit	Major components of platform business model definition, including governance and MVP deployment and validation	Conceptualization, design, development and operation	Defines metrics and strategy definition to enable platform evolution	Yes
7. Platform Innovation Kit	Major components of platform business model definition, including governance and MVP deployment and validation	Conceptualization, design, development and operation	Set of 2 canvas dedicated to evolution. Defines metrics and strategy definition to enable platform evolution	Yes
8. Two-Sided Platform Business Model Innovation	Major components of platform business model definition	Conceptualization	Not considered	Yes

Table 5. (continued)

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