

Flourishing Trim tabs

Designing business models that catalyze strongly sustainable enterprises: An exploration of Design variety using tools for collaborative modelling modes.

by

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Abstract

Business models are designed - intentionally and/or by default - by factors that affect the way in which the firm operates in relationship to business' actors, purpose, place and definition of success over time. The business model, when reviewed as a single unit framework, is effective in providing a lens of experimentation for innovation within that firm (Weiller and Neely, 2013).

Part of the research being done in business model innovation is how to develop and use a growing library of visualization tools, participatory design methods and systemic design frameworks in combination with well-researched ontologies. In the context of the UN Sustainable Development Goals and the pursuit of designing business models with the mission to *do good to do well*, the tools we use to design with, *matter*. The tools must allow for the inclusion of participants by adapting to a variety of inquiry modes and cognitive abilities, and support participants in re-framing profit-normative narratives to strongly sustainable business model narratives.

In this research I looked to examine the design and development of a dialogic design tool, specific to the Flourishing Business Canvas v2.0 (FBC v2.0), that compliments its use from the perspective of different user cognitive abilities and modes of inquiry. The research questions asked relate to exploring what might be a human centred, systemic design approach to Sustainable Business Model Innovation, and how might we explore the variety of collaborative modelling modes in designing Strongly Sustainable (Flourishing) enterprises?

This research frames the Business Model Canvas and aforementioned dialogic design tool as a Graphic User Interface (GUI) in the process of Business Model Innovation. It further hints at the act of modelling, using the tools, as a nascent inquiry into how second-order cybernetics plays out in the exploration of design variety using tools for collaborative modelling modes in the discussion.

This is a systemic design research project conducted as design action research. It was enacted via a collaboration between Halmstad University in Sweden and Ghent University in Belgium. It was conducted with the support of the Strategic Innovation Lab (sLab) at OCAD University.

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Contributing research was done in the municipality of Ghent in the Flemish Region of Belgium, supported by the Scheldt Basin and Scheldt River; and in municipality of Halmstad, the region of Halland, Sweden supported by the Nissan river.

The communities that influenced the knowledge and intentionality of this research include:

The Strongly Sustainable Business Model Group (SSBMG)

Flourishing Business Canvas First Explorer Community

Relating Systems Thinking and Design Community (RSD)

New Business Models Community (NBM)

Georgian College's Centre for Changemaking and Social Innovation (CSSI), and Research and Innovation (RI).

Thank-you.

Dedication

This work is dedicated to my son, Gabe. It is hopefully my contribution to a future where you, the people you care about and what you care about will Flourish. I hope someday this may inspire you to stay a Changemaker, a 'Flourishing Trim Tab'

Love Mom.

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Prologue

“If you want to teach people a new way of thinking, don’t bother trying to teach them. Instead, give them a tool, the use of which will lead to new ways of thinking.”

- R. Buckminster Fuller.

The following research might read more like an Action Manifesto, a philosophical trajectory in which I have re-written my own narrative rather than a contribution to the disciplines of design, business and/or sustainability. The goal was to explore the next steps for me as a designer. How could I better understand the contributive role of my talents and expertise to date in an increasingly Volatile, Uncertain, Complex and Ambiguous world (VUCA). How might I be *in* service to a world beyond conspicuous consumption?

This project unfolded as a journey, a strength-based response to the question asked above, or more aptly - what is the role of design and the designer in enabling “Flourishing Futures?”

I have had several roles across this research. Professionally I am a team member in the Centre for Changemaking and Social Innovation (CCSI), at Georgian College. As an applied design researcher and practitioner, I am a Flourishing Canvas First Explorer, co-designer and co-facilitator of the Social Enterprise Network of Central Ontario’s Flourishing Social Enterprise (SENCO) Development Series. Additionally, I spent a year as a graduate assistant as an Animator for the Strongly Sustainable Business Model Group (SSBMG) – a globally community of academics and practitioners exploring Flourishing-as-purpose and Flourishing-as-Sustainability projects. What these roles made clear was the importance of my own ‘Flourishing Imperative’, my own purpose to the contribution of “sustaining the possibility for human and other life to flourish on our planet for seven generations and beyond ” (Upward and Davies, 2019 citing, Cooperrider, 2017; Cooperrider and Fry, 2012; Ehrenfeld, 2009, 2000, Laszlo et al., 2014, 2012)

Thus, there were three works that inspired and formed the approach to this work; 1) Dr. Peter Jones’ essays Social Ecologies of Flourishing: Designing Conditions that Sustain Culture; 2) Design and Systemic Design Principles for Complex Social Systems and; 3) Dr. Joanna Boehnert’s work as captured in Design, Ecology, Politics. Towards the Ecocene. In combination with my introduction to the Flourishing Business Model Canvas via Upward and Jones’, An Ontology for Strongly Sustainable Business Models, - with the echoing phrase “Do Good to Do Well” - I felt that contribution could be in the co-design of ‘Flourishing Trim Tabs’ The idea that through this work of on-going research into the accessibility of flourishing design tools that it can support the practitioner and educational community in co-creating systemic narratives and competencies to help individuals, realize their own ‘Flourishing Imperative.’ In effect, build a global community of Flourishing Trim Tabs.

1. Introduction

1.1 Business Model Design and Innovation

A Business Model (BM) is defined in various ways by various academics innovating in this space. Thematically the literature depicts the BM to be “an abstract conceptual model that represents the business and money earning logic of a company (Hoveskog citing, Osterwalder, 2004) and how an organization creates, delivers and captures value based on a particular value proposition (Hoveskog citing, Teece, 2010).”

BM's are designed - intentionally and/or by default - by factors that affect the way in which the firm operates in relationship to business' actors, purpose, place and definition of success over time. The BM, when reviewed as a single unit framework is effective in the experimentation of innovation within that firm (Weiller and Neely, 2013) however may or may not identify the interdependencies of a business within an ecosystem context (Moore, 1993). Understanding that BM's have co-relationships to ecosystem innovation, and that ecosystems have a co-relationship to BM design, firms can no longer self-declare that it can be sustainable without reference to its whole value network (Jones and Upward, 2015)

This research frames visual business modelling tools as Graphic User Interfaces (GUIs) in the interactive process of designing Business Model Innovation (BMI). It further hints at the act of modelling, using these tools, as a nascent inquiry into how second-order cybernetics plays out in the exploration of design variety using interactive tools for collaborative modelling modes.

1.2 Flourishing

Flourishing is a concept with its origins in Positive Psychology. Corey Keyes and Barbara Fredrickson are often cited in its development both in flourishing as a descriptor and measure of living “within an optimal range of human functioning, one that connotes goodness, generativity, growth, and resilience. (Fredrickson and Losada, 2005). In the context of this research project, the concept of Flourishing is developed from Upward and Jones (2014) where Flourishing has been extended into the research domains of sustainable business model innovation.

Upward and Jones propose ‘Flourishing’ as the descriptor for strongly sustainable, with respect to a “[small group] that suggests the only practical (scientifically

valid) and ethical goal of business is to systematically and proactively sustain “the possibility that human and other life will flourish on earth forever” (Ehrenfeld, 2000a, p.36; Laszlo et al., 2014, p.10)” (Jones and Upward, 2015). Their research brought together the frameworks of natural and social science to offer new normative definitions of business model success - e.g. Flourishing.

These efforts were, in some cases, to provide stakeholders the ability to recognize the systemic importance of firms participating in socio-technical systems from a strongly sustainable perspective. Understanding how Strongly Sustainable firms participate, allows management and stakeholders to design firms to enable the formation, structure and pathways of agency, power and deep structures (Geels and Schot 2007) for futures where we are “sustaining the possibility for human and other life to flourish on our planet for seven generations and beyond ” (Upward and Davies, 2019 citing, Cooperrider, 2017; Cooperrider and Fry, 2012; Ehrenfeld, 2009, 2000, Laszlo et al., 2014, 2012).

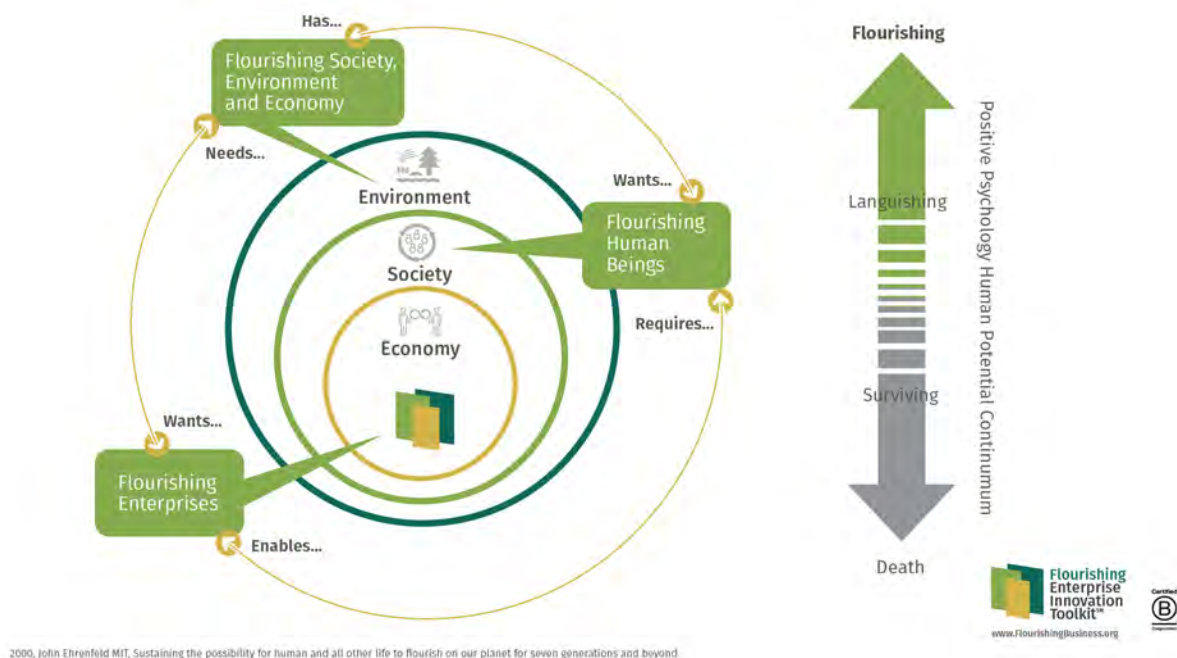


Illustration 1. Overview of the systemic interconnectedness of Flourishing.
Diagram courtesy of Antony Upward. Used with permission

1.3 Strongly Sustainable - *Do Good to Do Well*

Jones and Upward (2015) stated that business-as-usual and its attempts at sustainability could only land on a spectrum of weak sustainability. Furthermore, through their research, they challenged a legal entity's ability to self-declare that it is sustainable without reference to its *whole* value network. It's whole value network is a reference to the inclusion of natural science observations about the importance of certain stocks of critical natural capital, to sustaining basic life support functions.

“ if it were to exist, an organization that only enabled strongly sustainable outcomes as one that creates positive environmental, social, and economic value throughout its value network, thereby sustaining the possibility that human and other life can flourish on this planet forever (Ehrenfeld, 2000a; Willard et al., 2014). Such a firm would not only do no harm, it would also create social benefit while regenerating the environment (“doing good”) to be financially viable (“doing well”; Schaltegger, Lüdeke-Freund, & Hansen, 2012; Willard et al., 2014).” (Jones and Upward, 2015)

Business Models For Good Continuum

Profit-Normative	Responsible Business	Sustainable Development	Flourishing (Strongly Sustainable)
Business As Usual Profit Prioritization	Corporate Social Responsibility Strategy Reductionist	Informed by UN Sustainability Goals Eco-Efficiency	Emergent Tri-profit inclusive measurement
Do Well	Do Well While Doing Less Harm	Do Well Do [some] Good	Do Good To Do Well

Dyllick, T., & Muff, K. (2016). Clarifying the meaning of sustainable business introducing a typology from business-as-usual to true business sustainability. *Org. Environ.*, Vol. 29(2), 156-174, DOI: 10.1177/1086026615575176

Table 1. Business Models for Good Continuum.

As shown in Table 1, definitions of sustainable business models fall along a continuum, with ‘weakly sustainable’ aligned to profit-normative models through

to ‘strongly-sustainable’ with tri-profit inclusive models. The latter of course, defining a Flourishing Enterprise. (Table 1) From this lens Upward and Jones created four formative propositions “as compatible with both fundamental and emerging knowledge in the introduced natural, social, economic, management, and psychological sciences” of how a Strongly Sustainable Business Model would identify its existence. (Jones and Upward, 2015)

FP. Formative Proposition	Definition
FP1. Strongly Sustainable	Doing Good, To Do Well - financially viable while socially and environmentally regenerative.
FP2. Value Through Constellation	Co-created Value - All stakeholders/actors are considered across environmental, social and economic contexts
FP3. Systemic In Design	Business Models are systemic in design, allowing them to be interconnected to environment, society and economy
FP4. Tri-Profit Measurement	Business success is measured by ‘replacing’ profit with an inclusive conceptual metric of harms vs. benefits in environmental, social and economic contexts.

Table 2 . Overview of the four critical formative propositions to form the identity of a Strongly Sustainable Business Model. (From Jones and Upward, 2015, with permission)

1.4 The Strongly Sustainable (Flourishing) Business Canvas

A motivation for this research was to explore the usability and accessibility of the Flourishing Business Model Canvas and support the variety of modes in designing strongly sustainable business model innovations by users.

The Strongly Sustainable Business Model Canvas was proposed by Antony Upward at York University in research for a Masters of Environmental Studies in

2013. The research was a response to the Osterwalder (2009) Business Model Canvas' (Illustration 2), a narrative only accounting for an economic context, placing the business model narrative without contexts in the systems of the environment and society. The Flourishing Business Canvas, supports these adjustments and the assumptions “that designers of business models all have a singular normative goal: the creation of businesses that are financially profitable” (Upward, 2013).

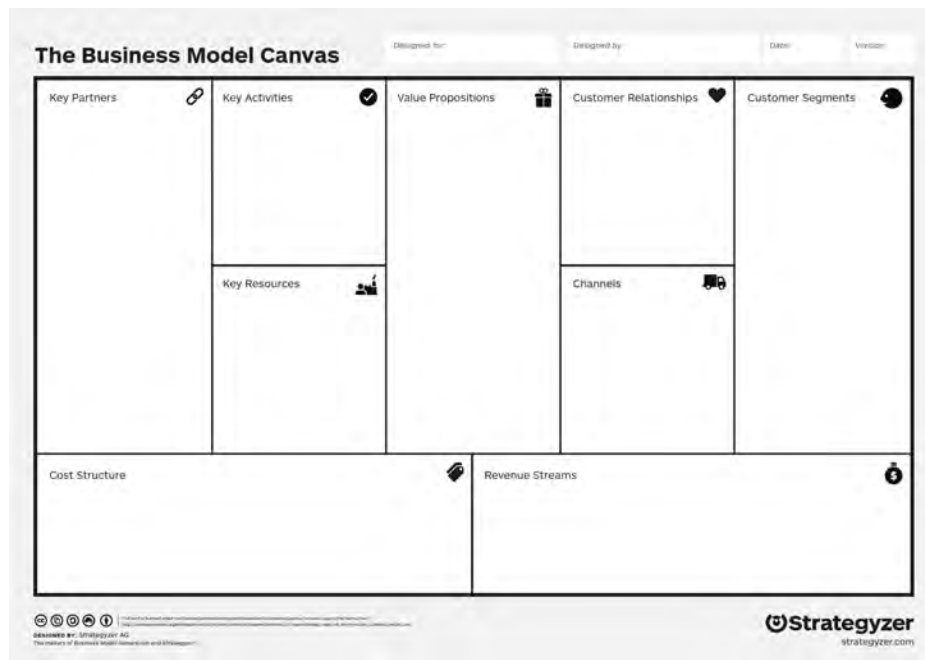


Illustration 2. The Business Model Canvas developed by Alex Osterwalder (retrieved from. strategyzer.com/canvas.)

Based upon an ecological economics framework - a trans-disciplinary field that bridges ecology and economics integrating psychology, anthropology, archaeology, and history (Costanza, 2010) - the Strongly Sustainable Business Model Canvas and its foundational ontology proposed a tool for “creating knowledge of what is required of businesses for strongly sustainable outcomes to emerge and helping business model designers efficiently create high quality (reliable, consistent, effective) strongly sustainable business models.” (Upward, 2013).

Currently the Canvas is in use by a global community of over 1700 practitioners, academics and flourishing advocates with membership in the Strongly Sustainable Business Model Group (SSBMG) hosted by the Strategic Innovation Lab (sLab) at OCAD University. The SSBMG is working together for the purpose of

knowledge mobilization to co-create and co-design the ‘Flourishing Imperative’ through projects that “ sustain the possibility for human and other life to flourish on our planet for seven generations and beyond ” (Upward and Davies, 2019 citing, Cooperrider, 2017; Cooperrider and Fry, 2012; Ehrenfeld, 2009, 2000, Laszlo et al., 2014, 2012).



Illustration 3. Flourishing Business Canvas v2 (© Antony Upward / Edward James Consulting Ltd., 2014. Used with permission.) - See Appendix A.

The Flourishing Business Canvas (Illustration 3) is an assemblage of the following components - Contexts, Perspectives and Questions. The Contexts are related to the nested systems in the Ecological Economics framework of the Environment, Society and the Economy. Within these Contexts come four Perspectives - the people, the value perspective, the process perspective and the outcome perspective. Within these Perspectives are 16 questions to catalyze inquiry and connection.

The goal of the 16 questions is to formulate the relationships and narratives between the Perspectives and within the Contexts as to how the business model acts and functions in the creation of “value.” In essence modelling using the Flourishing Business Canvas is the *act of systemic storytelling* through the creation of verbs between and across the Context, Perspectives and Questions of the canvas.

1.5 First Explorers

The Flourishing Business Model Canvas is currently released under version 2.0 (Illustration 3.) and has been in use since 2014 by a community of practitioners and academics through a First Explorer license. The First Explorer license allows business and community leaders, consultants and academics to experiment with Flourishing Business Modeling tools and methods. First Explorers are provided a fee-free license in exchange for feedback, evolution and innovations surrounding use of the Canvas. (flourishingbusiness.org, 2019) Together First Explorers are innovating and helping to contribute to the Flourishing Enterprise Toolkit, the SSBMG's response to Alex Osterwalder's *Business Model Generation Handbook*.

2. Research Opportunity

The opportunity for this research project emerged from parallel themes uncovered separately within different First Explorer participant groups and projects. These themes were connected through conversations with professor Maya Hoveskog, of Halmstad University, at a convening of founding members of the Flourishing Enterprise Institute (FEI) in August 2019 at the Viessmann Centre for Engagement & Research in Sustainability (VERiS) at Wilfrid Laurier University.

2.1 Finding Themes

In the First Explorer Community we discovered three concurrent phenomena emerging to represent common themes through observations of users working with the FBC v2.0. These were via 1) Lindsay Telfer's and my work with SENCO - Social Enterprise Network of Central Ontario out of the Centre For Changemaking and Social Innovation at Georgian College - while hosting start-up sessions for rural social entrepreneurs; 2) Professor Ostuzzi at Ghent University and Professor Hoveskog's at Halmstad University - while facilitating project work through an on-going Masters Level Engineering and Industrial Design distance peer feedback session; and 3) The Strategic Innovation Lab, while reviewing FBC v2.0 First Explorers' feedback with Flourishing Enterprise Toolkit leadership.

The observations from each First Explorer were documented respectively in an academic paper, facilitator evaluation reflections, and self reported facilitator feedback to the First Explorer Coordinator. The totality of these documentations summarized universal themes regarding participant interactions and cognitive comprehension in the use of the FBC v2.0. These themes included:

2.1.1 University of Ghent and Halmstad University

(1) the graphic design's limited ability to indicate or reveal connections between various areas of the model; (2) language and clarity of specific titles of the question blocks gave way to difficulties in distinguishing environmental costs from ecosystem services, channels from relationships, goals from benefits, ecosystem actors from stakeholders etc; ... (3) considering all three contexts at the same time and having a holistic perspective is hard for participants to conceptualize. (Ostuzzi and Hoveskog, 2019)

2.1.2 SENCO Georgian College

Through SENCO facilitator observation; (4) the appearance of apprehension in participants using the canvas, potentially due to a cognitive overload or not 'wanting to commit' to the finality of the boxes. Thus there may be concern the visual design creates a sense of general overwhelmedness. (Norris and Telfer, 2018).

2.1.3 First Explorers - Strongly Sustainable Business Model Group

The observations accounted for by Ostuzzi and Hoveskog and Telfer and Norris, were also thematically reflected in the feedback from First Explorer practitioners using the FBC v2.0. From these themes I summarized the following opportunities in which to explore the FBC v2.0's; 1) Graphic Interface(s); 2) Language and; 3) Affect on Cognitive Ability. The identification of these opportunities prompted me to explore the following questions:

2.2 Aspirational Design Research Questions

1. What might be a human-centred, systemic design approach to Business Model Innovation?
2. How might we explore the variety of collaborative modelling modes in designing Strongly Sustainable (Flourishing) enterprises?

At the heart of this was my curiosity to examine the visual design of FBC v2.0. and the effect it has on the modelling outcomes. From the observations and data collected from the three First Explorer projects recounted above, I was roughly able to articulate these as:

1. The artifact(s) aesthetics, colours and layout
2. The language, terminology and questions used.
3. The facilitation tools and methods used in a Flourishing design process.

3. Designing New Artifacts

In collaboration with Jones and Upward, I was invited (as a graphic designer and a First Explorer) to analyze First Explorer feedback and organize the feedback into themes related to language, visuals and facilitation process regarding participant and facilitator use of the FBC v2.0 since 2015. In discussions with both Jones and Upward, inquiries were then made into; 1) the aesthetics of the FBC v2.0 canvas and perceived usability without the presence of a facilitator and; 2) between Jones and Upward, conversations around the language and construction of the Canvas' prompt questions driven by the ontology.

While Jones and Upward made adjustments to language, I turned my attention to interactive design and visual functionality of the Canvas. The first iteration of FBC v2.0, was dubbed with the working title The Flourishing Enterprise Canvas v2.1.a (FEC v2.1a) and was based on several interpretations of the First Explorer data.

3.1 New Canvas Aesthetics

Key elements that were addressed in the development of FEC v2.1a, were attributions to aesthetics including colours, fonts, logo, icons and other stylistic elements that were used in FBC v2.0. The goal with FEC v2.1a was to 1) lighten up the background of the Contexts; 2) the visual change of FEC v2.1a, was aimed to strip down the number of elements and text in an effort to minimize cognitive loads; 3) make it cognitively easier to signal users place the “stickies” properly in the question boxes relating to appropriate Contexts - Environmental, Society, Economy. This was the hardest to achieve, yet the key value proposition of FBC v2.0 towards achieving the SSBM ontology's Formative Proposition 3. “Systemic In Design” was to

It was in solving for the third, that it became apparent we were asking users to model three dimensionally using a two dimensional layout. I became aware at this point, the visual evolution of the Canvas was perhaps not a graphic design solution as much as a user interaction or user experience design solution. From this point my intention was to increase the ability or at least the perception of usability for user to model across three systems at once.

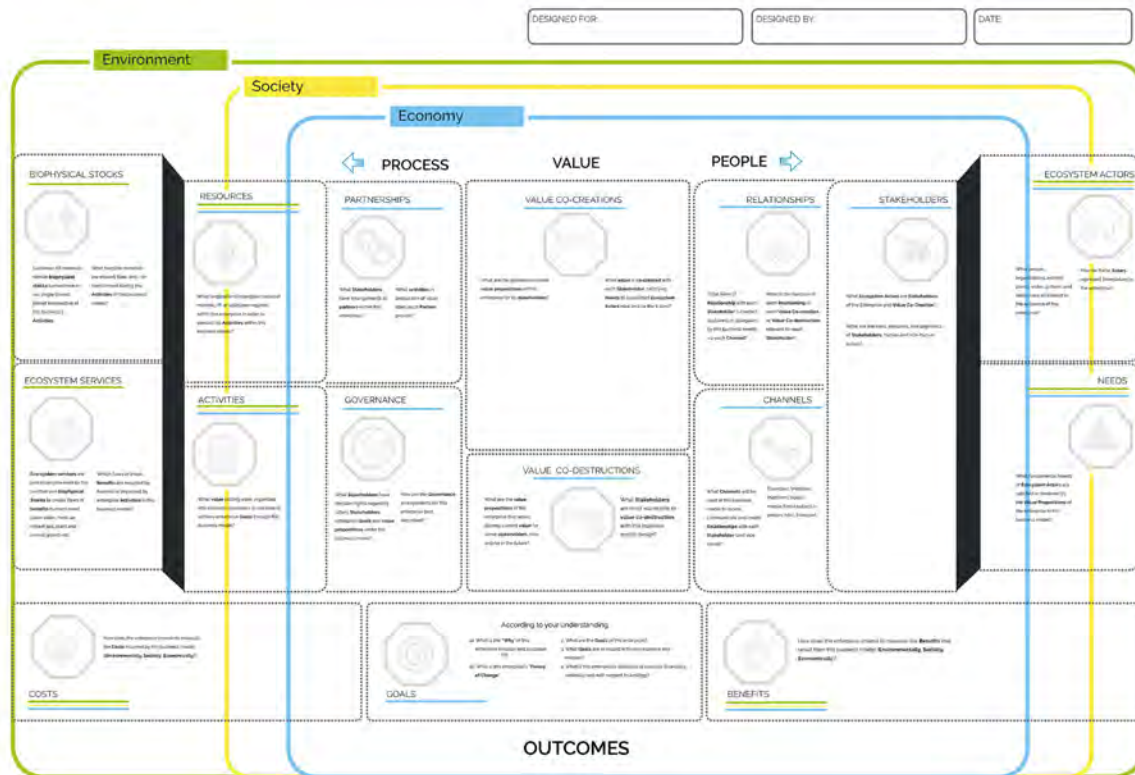


Illustration 4. The Flourishing Enterprise Canvas v2.1.a - with Prompt Questions
(See Appendix B)

Digging deeper into design principles related to user interaction design for both aesthetics and usability, rationale was found in Sonderegger and Sauer's analysis of design aesthetics and perceived usability research. In the literature, the use of design aesthetics *"may refer to the objective features of a stimulus (e.g. colour of a product) or to the subjective reaction to the specific product features."*

(Sonderegger and Sauer, 2009) The response to aesthetics can be affected by several human psychological, age, cultural and gender factors. The influence of aesthetics on usability, one of the rationales for the redesign of the FBC v2.0, is found in the literature to "confirm that perceived usability was positively influenced by the aesthetics of the product." (Sonderegger and Sauer, 2009)

Sonderegger and Sauer successfully demonstrated that aesthetics did have an effect on perceived usability. They were also able to demonstrate that user performance needed 'motivation parameters' to solicit specific outcomes. However their "study and previous work have demonstrated, there seems to be increasing evidence for the influence of aesthetics beyond subjective parameters such as perceived usability" (Sonderegger and Sauer, 2009)

With the above understanding of Sonderegger and Sauer's study, the next consideration for the 'aesthetic' redesign and perceived usability of a new version of the canvas was - Does the design of the FEC v2.1a affect user satisfaction performance or confidence in the ability to design a systemic business model? In consultation separately with Jones, and Ostuzzi and Hoveskog this involved curiosity in exploring how might the canvas be used (in context of a facilitated environment) to support individual modelling modes, group efficacies and agency to design better systemic business model outcomes?

3.2 Design for Dialogic Interaction

The Flourishing Enterprise Hex Cards v1.0 (FEHC v1.0) were developed as a design solution for the inclusion and on-boarding of group efficacies and individual agency to better understand, and thus design for a Flourishing business model. Their purpose was 1) a response to the recognition that we were asking users to conceptually model in 3 dimensions (Economy, Social, Environmental) using a 2 dimensional tool -or interface - thereby producing cognitive complexities to challenge business logic; 2) The ability to have 'micro-moments' of dialogue by allowing the actual components of the canvas to be fluid and rearrangeable supporting a dialogic design methodology and; 3) We assume a style of collaboration with the canvas and we need to acknowledge the potential range of cognitive abilities, thinking process and modes of inquiry of users, in addition to accounting for human personality theories in the configuration of groups or individuals.



Image 1. The Flourishing Enterprise Flourishing Enterprise Hex Cards v1.0 being introduced for the first time as prototype at the SENCO's Social Impact Gathering, June, 2019 - Barrie Ontario Canada

The FEHC v1.0 system consists of 2 types of cards 1) White cards that contain the 'Prompt Questions and; 2) Coloured Cards with each of the Canvas icons in each of the colours of the Contexts - Economy, Society, Environment. Thus "Stakeholder" would have a blue card for Economy, a yellow card for Society and a green card for Environment giving a possible placement as an Environmental Stakeholder, a Society Stakeholder or an Economic Stakeholder in the creation of the business model narrative.

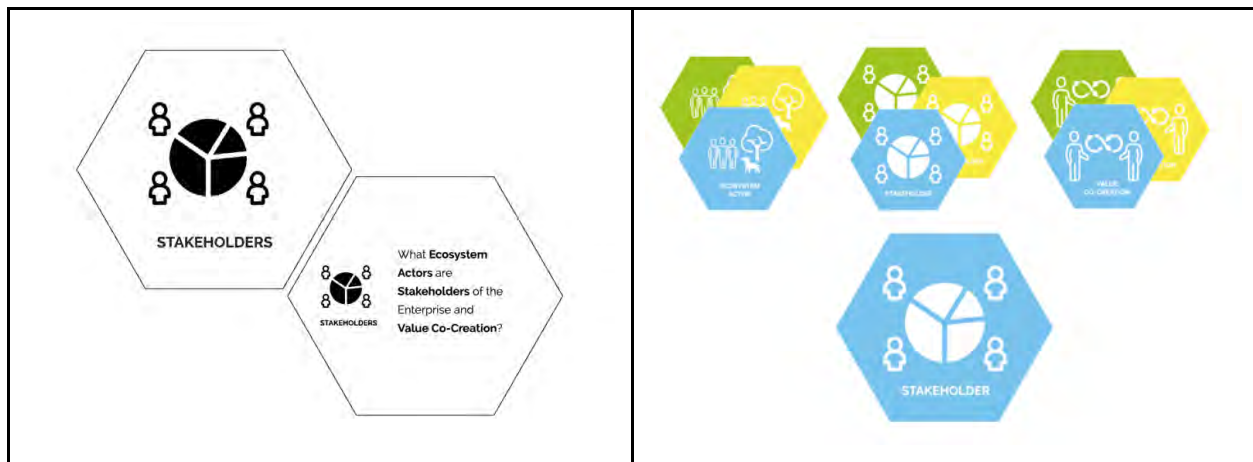


Illustration 5a. Flourishing Enterprise Hex Cards v1.0 (FEHC v1.0)

How They Work

1) Users read the "Prompt Question" on the White Hex Cards (Illustration 6b) and identify what words are bolded; 2) Users then pull the colour set of corresponding Coloured Hex Cards that match the bolded text (which are the nouns on of the model); 3) Using the coloured sets of Hex Cards and sticky notes users then move the cards around to uncover the various relationships that best answer the Prompt Questions. The goal is to identify the verbs that connect these nouns; 4) When done, users can either leave the sticky notes on the respective cards to deepen the model's narrative or; 5) move the narrative over to the appropriate box on the FEC v2.1a (Illustration 7)

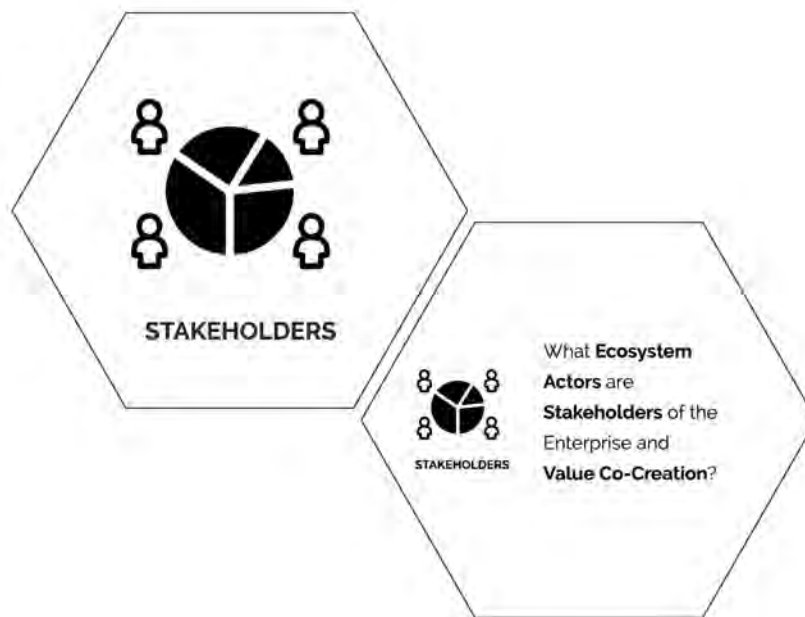


Illustration 5b. Flourishing Enterprise Hex Cards v1.0 (FEHC v1.0)

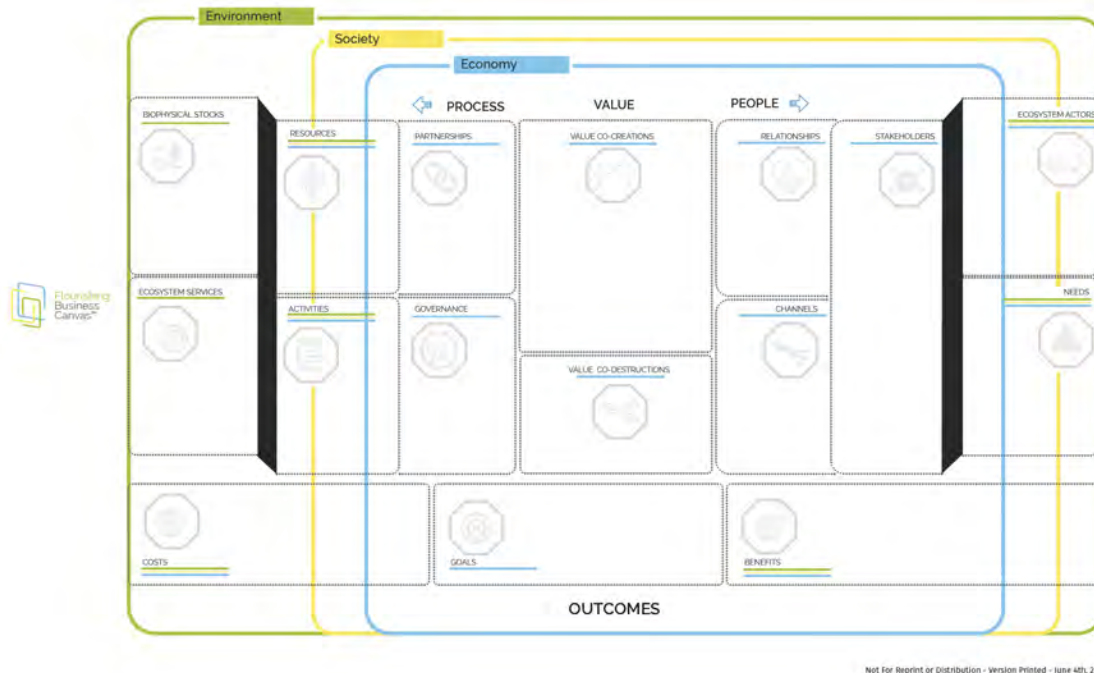


Illustration 6. The Flourishing Enterprise Canvas v2.1.a - without Prompt Questions “Bike Rack” for use in combination with the Flourishing Enterprise Hex Cards v1.0

The concept of introducing the Flourishing Hex Cards (FEHC v1.0) was to use them with a simplified version of the FEC v2.1a that did not have the Prompt Questions printed in the boxes (again reducing the visual amount of information directly on the Canvas). The goal is to allow participants to dynamically tell the story of different interconnected relationships across Contexts and Perspectives using the coloured Hex Cards and sticky notes (Image 1). Once these narratives are constructed, participants could then transfer the sticky notes off the Hex Cards to the Canvas.

3.3 Artifact Design Rationale

Thematically, the pathways to a solution that is human-centred design and responds to the Aspirational Design Research Questions in section 2.2, can be hinted at in the analysis of Tauscher and Abdelkafi, 2016; Eppler and Platts, 2008; and Breuer, Lüdeke-Freund, and Tiemann 2018.

Tauscher and Abdelkafi, and Eppler and Platts together identified the complexities of cognitive load in the business model design process. Specifically Tauscher and Abdelkafi highlighted this in their study around business model visualizations and recommendations from a cognitive perspective around the role visual thinking plays in business model innovation. “Business models have become subject to innovation themselves over recent years. Business model Innovation has both been identified as a necessity and a key driver of firm success (Tauscher and Abdelkafi, 2016 citing Schneider and Speith, 2013). In the case of the FBC v2.0, this can be linked as well to the success of our planet’s ability to sustain human and animal life.

Tauscher and Abdelkafi’s analysis takes the viewpoint that business models are cognitively constructed within the minds of (company) stakeholders and are therefore conceptualized as reflections of stakeholder cognitive structures. Simultaneously the articulation of these conceptualizations in a visual format that can be ideated upon and used for new business model design is critical to Business Model Innovation. As a result the examination of cognitive barriers were identified as inherent in the various business model innovation stages in the act of both visualizing the current model and the ability to innovate a new business model. This was due to the cognitive absorption required for complexity and abstracting their cognition from dominant business model logic. (Tauscher and Abdelkafi, 2016)

The task of developing new business model ideas is recognized as especially complex (Chesbrough, 2010; Doganova and Eyquem-Renault, 2009), as business model idea generation requires the innovation team to consider and understand

various and potentially conflicting positions of the stakeholders and units affected. In addition Eppler and Platts, 2008 state “the main advantage of the visualization tool... is in formalizing, capturing and sharing participants’ mental models” (Eppler and Platts, 2008) This also relates to the various modes of inquiry and thinking processes involved in the visualization and innovation of business models. Specifically “different artifacts can support different types of thinking processes and therefore different cognitive abilities” (Tauscher and Abdelkafi, 2016).

Breuer, et al 2018) proposed a shared understanding for the benchmarks required in innovating towards sustainable business models. Thus, they also laid out the cognitive absorption capacity needed of the users and facilitators in not only modeling using business logic but also in bringing sustainability logic into the new business model.

Based upon both literature and facilitator assumptions, observations and participant feedback to date, the design of aesthetics and interaction of business modelling tools must account for cognitive abilities of users. In the design rationale for the development of the FEHC v1.0 was an effort to support the cognitive ability to problem solve across the three Contexts with a two dimension tool. In this instance I pulled from the universal design principle *Chunking*. This is “a technique of combining many units of information into a limited number of units or chunks, so that the information is easier to process and remember” (Lidwell, Holden and Butler, 2010). While predominantly used where recall of short term memory is required, the idea that users working with the Canvas could ‘chunk’ specific information together to form a variety of narratives, making the modelling process more manageable and potentially yield a variety of deeper systemic relationships across the Canvas.

4.0 Evaluating Interactive Modeling Artifacts

4.1 ‘The Triple Experiment’

In an effort to tackle what was thematically identified as the ‘cognitive complexity’ of the Canvas, it was agreed to re-engage Halmstad University, Ghent University and Georgian College to run a ‘triple experiment’ using the following *new* ‘Flourishing Artifacts:’

- 1) a re-designed Flourishing Enterprise Canvas v2.1.a;
- 2) a new dialogic tool Flourishing Enterprise ‘Hex Cards’ v1.0

4.2 Assumptions and Questions

The focus and design of the research was to test with these new *Flourishing Artifacts*, against assumptions based upon previous research done by Ostuzzi and Hoveskog, 2019; general feedback from the First Explorer community; and SENCO facilitator observational feedback during SENCO’s Flourishing Social Enterprise Development Sessions:

Assumption	Hypothesis
The FBC v2.0 is complex, more specifically the Flourishing Business Model is a cognitive artifact (Täuscher, K., & Abdelkafi, N. citing Baden-Fuller and Haefliger, 2013) and subject to cognitive capabilities and thus cognitive challenges posed by its visualization process in creating strongly sustainable business models. (Eppler and Platts, 2009, Baden-Fuller and Haefliger, 2013)	If we simplify the usability of the FBC v2.0, it will lead to potentially better outcomes, thus better support transition design conversations in an ecosystemic context.
The change in aesthetics of the FEC v2.1a and the addition of the	“Different artifacts support different types of thinking processes and therefore address different cognitive

Flourishing FEHC v1.0 may lead to confidence of the usability of the tool	capabilities” (Baden-Fuller and Haefliger, 2013) Business model innovation requires creative confidence and simplification may reduce the cognitive load required when developing strategic visualizations.
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Finally in the ‘triple experiment’ I was interested in specifically asking the following questions related to the design artifacts - FEC v2.1a + FEHC v1.0 - and the business modelling process and respective outcomes:

- How will the simplified design of the FEC v2.1a and the new Flourishing Enterprise FEHC v1.0 v1.0 influence the design act?
- Learning is context dependent but what is the effect of the design tools - specifically the FEHC v1.0 - on participant interaction and dialogue and the ability of the FEHC v1.0 to help people tell a story that the audience finds informative, compelling and creates innovative systemic business models *faster?*

4.3 Research Methodology

4.3.1 Methodology

The research methodology used to answer the spectrum of inquiries around the new Flourishing Artifacts was Design Action Research Methodology (Swan, 2002). This was illustrated in the design of a series of three facilitated workshops in various global locations, with each enactment of the workshop informing the iterations of the artifacts to be used in the next enactment.

4.3.2 Rationale of Methodology

With the totality of the triple experiment built on a Design Action Research methodology (Swan, 2002) and within a Systemic Design Science Research paradigm (Upward 2013), the ‘Flourishing Artifacts’ were designed in iterations across a series of co-creation business modelling workshops, allowing for the contextualization of the ‘Flourishing Artifacts’ to be researched within in Social and Service Thinking concepts (Jones, 2014). Simply stated - our methodological approach, was based upon our interpretation that the evolution of the ‘Flourishing Artifacts’ would be iterated from a product design perspective (Design Thinking, rapid prototyping), with the explicit understanding that the

'Flourishing Artifacts' would be used to design and model interconnected enterprises, cultures and policies which at some point will inform strategies that will be deployed into complex social systems (Systemic Design, systems and social theory).

Defining 'Innovation' and 'Interactive' for the Methodology

Upon the completion of each workshop, the participants were asked to evaluate the usability and accessibility of working with the FEC v2.1.a and FEHC v1.0 through a survey questionnaire. The goal was to explore, from the user's perspective, the insights around usability and effectiveness of modelling a Flourishing Enterprise. Using these new Flourishing Artifacts and using a new interactive system (via the FEHC v1.0), how would this support the process of Flourishing Business Model innovation and the creation of a strongly-sustainable enterprise model as a systemic solution to their firm's and/or community's specific issues?

Defining *Innovation*

I used the definition of *innovation* as articulated by Crossan and Apaydin's research - "production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome." (Crossan and Apaydin, 2010) - and applying it in the context of developing a Flourishing Business Model Innovation for teams and individuals working with strongly-sustainable of Flourishing business model design tools. In the context of Crossan and Apaydin's, research we will thus be identifying the Flourishing business modelled – the outcome - that will have been designed as a result of a variety of interaction modes with collaborative modelling tools – the process as the totality of the innovation towards the Flourishing Enterprise Toolkit

Defining *Interactive*

I used the definition of *interactive* as defined by Russell Ackoff. Ackoff was specific in his definition of interactive being about "the design of a desirable present and the selection or invention of ways of approximating it as closely as possible." (Ackoff, 2001) Our application in this research, relates to the process of what Ackoff calls Idealized Design where the FEHC v1.0 are able to provide design variety towards the feasibility and viability to "best ideal-seeking system (Flourishing Enterprise) of which its designers can currently conceive" (Ackoff, 2001)

4.4 Methods

Two methods were employed for data generation, the dialogic (Jones, 2010) using the Designer/Observer method (Upward, 2017) and Participant Reflections. A semi-structured participant questionnaire, and informal facilitator observations and reflections were used to collect participant data.

Method	Use	Purpose
Designer/Observer	Workshop facilitation technique to model and design narratives using the FEC v2.0 and FEHC v1.0.	Data Generation (Strangemaking > Sensemaking)
Dialogic Reflection	Workshop reflection in which participants have conversation to Understand and Communicate.	Data Generation (Sensemaking > Discovery)
Survey Questionnaire	Gather feedback from open ended questions regarding the use of the tools and workshop outcomes	Data Collection (Discovery > Understanding)
Facilitator Observations and Reflections	Gather feedback and observations for comparative analysis to past participant experiences	Data Collection (Understanding > Evaluation)

Table 3. Summary of Data Generation and Data Collection Methods

4.5 Workshop Participants

4.5.1.a Ghent University

In the first enactment of the Triple Experiment, Ghent University (UGhent) led by professor Francesca Ostuzzi, PhD incorporated FEC v2.1.a and FEHC v1.0 into project work for 43 UGhent Masters of Industrial Design Engineering students. Students were grouped into 13 teams of 3 students, and 1 team of 4 students. Their goal was to map existing businesses and then use the FEC v2.1.a and FEHC v1.0 to make their own model for a health care product.

Student participants in this phase had little or no knowledge of BMs and no exposure to the FBC v2.0. Participants however had extensive knowledge of how to work with visual design tools and user-centred design frameworks. The student participants worked with a consortium of different companies in the healthcare space. The organizations that were modelled consisted of both health care centers, design agencies, and an educational institution. Businesses modelled where contained within an urban context.

4.5.1.b Halmstad University

In the second stage of this Triple Experiment, Halmstad University (HalmstadU) held a co-creation workshop using the FEC v2.1.a and FEHC v1.0. This workshop was co-facilitated by Dr Maya Hoveskog and myself at HalmstadU in the Halland Region of Sweden. A total of 40 individuals participated and were distributed in the following percentages across these participant groups:

- 67.7% - Student at Halmstad University
- 12.9% - Faculty at Halmstad University
- 9.7% - Industry Representative
- Under 10% - Organization Supporting Start-Ups
- Under 5% - Regional Government Representative
- Under 5% - Student at another institution

Within the industry groups, participants were predominantly rural and non-urban starts-ups and included a leather goods manufacturer, sheep farmers and wool production stakeholders, and addiction prevention counselors. In addition, attendance from a Halland regional social enterprise incubator was also represented in this group.

HalmstadU workshop participants had various levels of knowledge and exposure to business models, business modelling and the FBC v2.0. The predominant

group of participants were Masters of Engineering Students, all with previous knowledge of the FBC v2.0.

Question	Yes	No
Previous knowledge about business modelling? n = 31	84%	16%
Previous experience with business modelling? n = 31	74.2%	25.8%
Previous knowledge of the Flourishing Business Canvas n = 31	58%	41.9%
Previous experience modelling with the Flourishing Business Canvas n = 27	44.4%	55.6%

Participant Sample N = 31

Table 4. Business Modelling Understanding at Halmstad University Workshop

4.6 Workshop Design

4.6.1.a Ghent University

In Ghent's enactment, the process was as follows:

- An Introductory overview to Flourishing, Business models and the Business Model Canvas was given via an on-line lecture by Dr Maya Hoveskog from Halmstad University. In the same on-line lecture a demo of how to use the 'FEHC v1.0 was given by myself.

- The participants were then given both the FEC v2.1a and FEHC v1.0 for an in-class workshop facilitated by Dr. Francesca Ostuzzi to map an existing business. Student participants were asked to take at least one picture every ten minutes to capture the configuration and progression of working with both the FEC v2.1a and FEHC v1.0.
- Modelling with FEC v2.1a and FEHC v1.0 continued in consultation with the consortium health care partners throughout the duration of the course, supporting students in modelling their own idea.

4.6.1.b Halmstad University

In Halmstad's enactment, the process was as follows:

- 10 HalmstadU Masters of Engineering students were given three start-up social purpose business model challenges from the region of Halland. They used the FEC v2.1a to model a generative concept to address the challenge using a pre-existing experience with the FBC v2.0 plus initial trend and sector research.
- A full day prep workshop was facilitated at HalmstadU by Dr Maya Hoveskog and myself for the 10 Masters of Engineering Students. This workshop was preparation for leading a co-creation workshop using the FEC v2.1a and FEHC v1.0 to co-create three business models to address the business model challenges from regional Halland industry partners, and respond to the UN Sustainable Development Goals.

Company	Leather	Addiction Prevention	Wool
Challenge	Finding better logistical solutions for a fully traceable, locally produced and environmentally tanced leather products	Finding a way how to work preventively with alcohol and drug-related issues within organizations	Finding a use for wool, which is considered and treated as waste today
Sector	Manufacturer	Service	Agriculture

Table 5. Business Challenges and Sectors Participants modelled at Halmstad University Workshop

- The structure of the Halmstad Workshop entitled - *Realizing the SDGs by Imagining Business Models for a Better Future – a Co-Creation Workshop* - divided 40 participants into 9 design teams of 4-5 participants. We had 3 teams for each industry partner needing a business model. This allowed us to make 3 groups consisting of 3 design teams and the opportunity to give each team within the group a different combination of the canvas and cards. The distribution of Flourishing modeling tools were distributed in the following configurations:

	Group 1's	Group 2's	Group 3's
Tools Provided	The FEC v2.1a (with prompt questions)	The FEC v2.1a (without prompt questions) Hex Dialogue Cards	Hex Dialogue Cards
Business Model Teams	Wool Leather Addiction Prevention	Wool Leather Addiction Prevention	Wool Leather Addiction Prevention

Table 6. Distribution of Flourishing Artifacts/ModellingTools to Teams at Halmstad University Workshop

- Student teams were asked to present their knowledge and research to date, including a Theory of Change statement that would become the starting point to build into the canvas or arrange the FEHC v1.0. Participants where then asked to consider, through the presented Theory of Change what the business might look like in 2025.
- The facilitation method followed the recommended structure of building out key triads - e.g Stakeholder, Value Co-Creation & Activity - as rounds and using the Designer/Observer process as provided in our First Explorer package Business Modelling Using the Flourishing Business Canvas presentation. (Upward, 2017)

- The workshop framework included 4 rounds of modelling and 1 'Wildcard' round. This consisted of 20 minutes of modelling and 10 minutes of reflection and documentation of the iteration. Participants within this 20 minute round were asked to play the role of either the Designer or Observer and then switch after 10mins. Designers were asked to explain their design using a narrative to connect the ideas, while Observers asked questions about the narrative.

Modelling Round	Business Model Components Used:
Round 1	Value Co-Creation, Value Co-Destruction, Activities, Stakeholders
Round 2	Actors, Needs, Benefits, Costs, Channel, Relationships
Round 3	Value Co-Destructor, Biophysical Stocks, Ecosystem Services, Relationships
Round 4	Partnerships, Governance
Wildcard Round	<p>Pick one of the following to understand how it changes your model:</p> <p>OPTION A - Your Governance Structure changes to a co-operative model.</p> <p>OPTION B - Your Revenue Model is 'Matchmaking'</p>

Table 7. Facilitation framework for Halmstad University Workshop

4.7 Data Collection

In both workshops - UGhent and HalmstadU - participants were asked at specific time intervals to document the state of their model. This allowed insights into how the tools were being used through the modelling rounds or periods. Other data collection sources included:

- Facilitator reflections from facilitated sessions
- Pictures of the student's work during facilitated sessions
- Survey at the end of workshops to evaluate the usability of working with the Flourishing Enterprise 2.1 Canvas, FEHC v1.0 and facilitation method

In total, 83 participants co-created 23 business models. Participants ranged from moderate knowledge and experience in business models in general to little experience and knowledge of Flourishing business models.

4.8 Next Steps - Enactment Three - Georgian College

The scope of the Triple Experiment to date, has ultimately yielded a sufficient sample size to create an evaluation on our assumptions and the hypothesis posed in section 4.2. Based upon the analysis of data collected to date, we are also able to iterate both tools, facilitation method and process for the third and final workshop at Georgian College in February 2020. In this context, we are applying the Design Action Research methodology for the totality of the Triple Experiment to develop an innovation to the Flourishing Enterprise Toolkit as defined in Section 4.3.2a via Crossan and Apaydin's work.

For the third and final Georgian enactment, an evaluation will be done between groups using the FBC v2.0, FEC v2.1a, FEHC v1.0 and a new FEC v2.1b. The facilitation process will closely follow HamstadU's framework in an effort to gain a fuller understanding of the effect the evolution of the aesthetic interfaces and cognitive accessibility of the tools. A full evaluation of data collected from all three workshops can then be completed using the same framework from Eppler and Platts (2009) study and the New ISO Standards for Usability (Bevin et al, 2016)

5. Outcomes

5.1 Data Analysis

Data in both the UGhent and HalmstadU workshops was collected through 1) photographs at timed intervals of the modelling process; 2) participant survey questions; 3) informal facilitator observations and reflections, and; 4) informal participant reflections.

Data was generated from the artifacts generated by a total of 43 participants who collectively modelled 23 Flourishing Business Model concepts across manufacturing, agriculture, service delivery and health-care related sectors. Participants represented Master's Students in Industrial Design Engineering, Engineering, Business Owners, Entrepreneurs, University Faculty social science and engineering disciplines, Students from social sciences programs, Farmers, Design Professionals, Health Care Professionals, Suppliers, Business Consultants, Business Advisors and Researchers.

5.1.1a Ghent University

At UGhent a survey was conducted after the first day of class which contained the introductory workshop to the FEC v2.1a and FEHC v1.0. This was part of the Master's of Industrial Design Engineering in-class assignment requirements. In the UGhent survey all 14 teams provided collective group feedback on their experiences with FEC v2.1a and FEHC v1.0.

5.1.1b Halmstad University

At HalmstadU a voluntary survey was conducted and focused on individual experiences with the tools and workshop in general. The survey was administered post-workshop with responses from 31 out of 40 participants who attended.

5.2 Facilitator Reflections and Observations

The following are qualitative observations from both Ortuzzi and Hoveskog after the workshops that reflect upon their previous analysis of using the FBC v2.0 in their paper *"Towards Education for Flourishing. A multidisciplinary, multinational, distance peer feedback session"* and the changes they observed in their student participants using the FEC v2.1a and FEHC v1.0

5.2.1a Ghent University Facilitator

- Students enjoyed the interactive part of the cards, it helped to take one perspective (environmental / social / economic) at a time and yet sum them up very quickly (in fact, in the original canvas - Flourishing Business Canvas 2.0 - it is not possible to "zoom in and out" the different perspectives).
- I observed as they could interact with team members in an easier way, the conversation went smoother than in previous editions (using the FEHC v1.0)
- As shown in their (students) questions I do believe that there is still a very big gap for students to be able to use the canvas in such a setting... to them (these are their words) it is still too "abstract" and some concepts too hard to grasp. I believe this refers to the content of the canvas and not to the format & graphic design. Some areas are hard to grasp or to relate to (and maybe some questions in the hexagon as well).

5.2.1b Halmstad University Facilitators

- Using the cards revealed biases towards one Context or the other. For instance we had teams using the FEHC v1.0 show that their models were either completely an economic narrative without an environmental or social perspective and other teams show that their models were completely a social narrative without economic viability or consideration of the connection to the environmental context.
- The cards help to prioritize the goals/values and support the action plan that you create as a result of the back casting process.
- Using the FEHC v1.0 promoted teams to think in 3D dimensions and helped to decrease cognitive load in their ability to model a more balanced better outcome, that is the end result was an innovation towards a true Flourishing Business Model.

5.3 Limitations

Data is collected from two out of the three workshops as outlined in the Triple Experiment approach. The participant and facilitator data collected from Halmstad and Ghent was done predominantly in the context of the FEC v2.1a and Flourishing Enterprise FEHC v1.0. Moving forward the final experiment at Georgian College will seek to test the FBC v2.0, the FEC v2.1a + FEHC v1.0 (having made revisions to the designed based upon data from this analysis) and a third variation of a "Hive" canvas + cards (FEC v2.1b).

[illegible]

Ultimately deeper analysis of the final models designed must be done to confirm if the quality of the tools and their redesign are truly answering our research questions. This will be done after the third and final workshop.

6.0 Contribution to The Flourishing Enterprise Toolkit

The Triple Experiment to date, has been thematically aligned to the Eppler and Platts, and examining the role of design in crafting the visual tools needed to envision or support the endgame of the "Flourishing Imperative." To date, with the observation and reflections collected from the workshops at GhentU and HalmstadU I can make the broad subjective statement that 'the tools that we use to design with *matter*.' Much like the conversation of bias in Machine Learning systems, so too bias can be built into business models. Can tools like the FEHC v1.0 be strategic dialogic design pieces to help reveal, discuss and transform bias? Are they a more effective interface for the "designers" (users) than the canvas-alone in modelling for a Flourishing bias?

The following includes iterations of the FEC v2.1a, as well as a more integrated use of the FEHC v1.0.with the Canvas for discussion:

6.1 Proposed Design Evolutions of the Flourishing Enterprise Canvas 2.1.a

Based upon the participant feedback and facilitator observations, I have proposed the following sets of design iterations to the FEC v2.1a and a new iteration - FEC v2.1b - that considers a more integrated use of the FEHC v1.0.

6.1.1 Flourishing Enterprise Canvas v2.1.a Modifications

The Flourishing Enterprise Canvas "Do Good To Do Well" - Canvases

In this iteration, three key revisions were made based upon data collected from GhentU and the HalmstadU workshops 1) A numbering system was attached to the individual Question Blocks. This was based upon multiple requests for a guide or recommended starting point for moving through the modelling process; 2) A slight change in colours to make the Canvas readable in greyscale (e.g - Black and White print-outs) but more importantly to better comply with colour accessibility for users and; 3) Structurally adjustments were made to the lines that represented the Contexts across the Question Boxes. The design adjustment was to ensure users could clearly place sticky notes within the appropriate Contexts within the Costs, Goals, Benefits, Actor and Needs boxes.

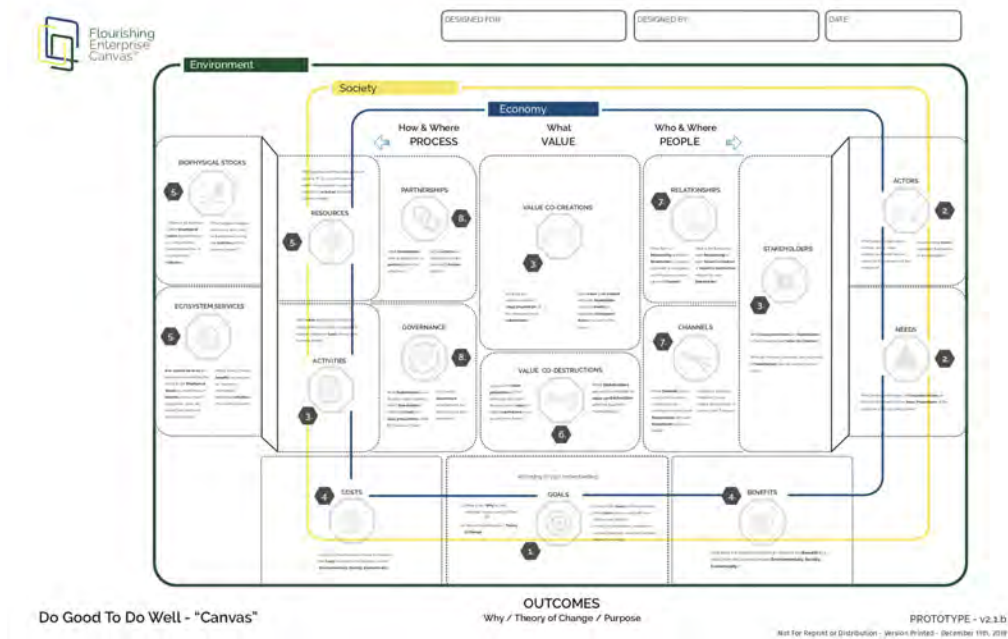


Illustration 7. Flourishing Enterprise Canvas 2.1.b with Prompt Questions “Do Well To Good - Canvas” (also see Appendix C)

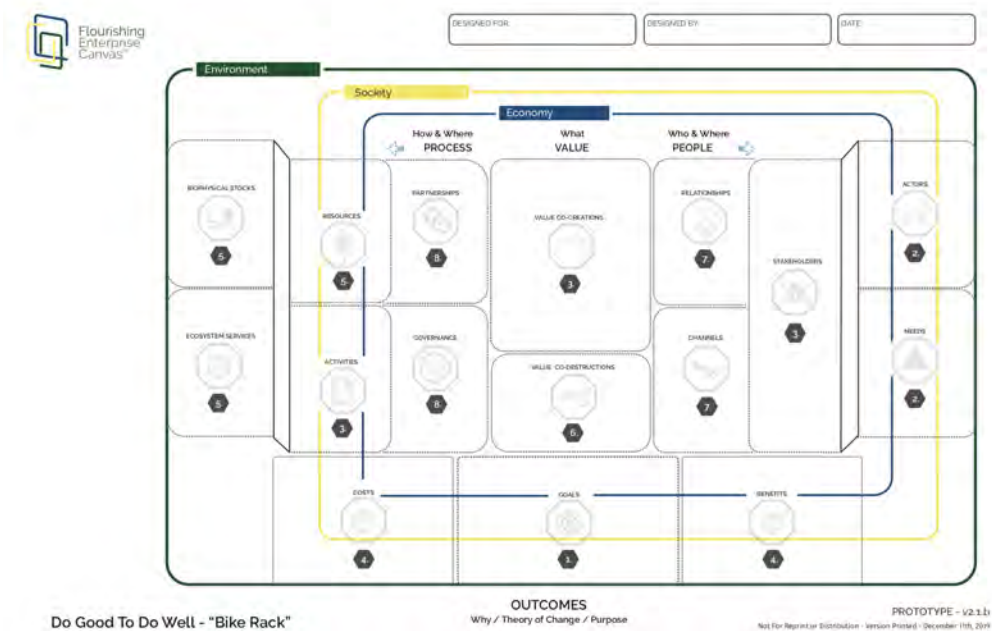


Illustration 8. Flourishing Enterprise Canvas 2.1.b without Prompt Questions Version “Do Well To Good - Bike Rack” Designed to be used with Flourishing Enterprise Hex Cards v1.1 (also see Appendix C)

6.1.2 Flourishing Enterprise Canvas v2.1.c - 'Hive Canvas'

After review of HalmstadU data with Dr. Maya Hoveskog, it was agreed that the FEHC v1.0 were a valuable tool for working with the canvas. Participants in feedback and in the data requested a better organization system for physically working with the FEHC v1.0. In this re-interpretation, the totality of the design was examined to explore a better integration between the Canvas and Cards. This inquiry led to using a honeycomb structure to match the Hex Cards. In these Canvas. The numbering system, colour accessibility and structural adjustments to support sticky notes in the correct Contexts introduced in FEC v2.1b iterations were also transferred to this layout.

The Flourishing Enterprise Canvas v2.1.c - "Do Good To Do Well" Hive Canvases

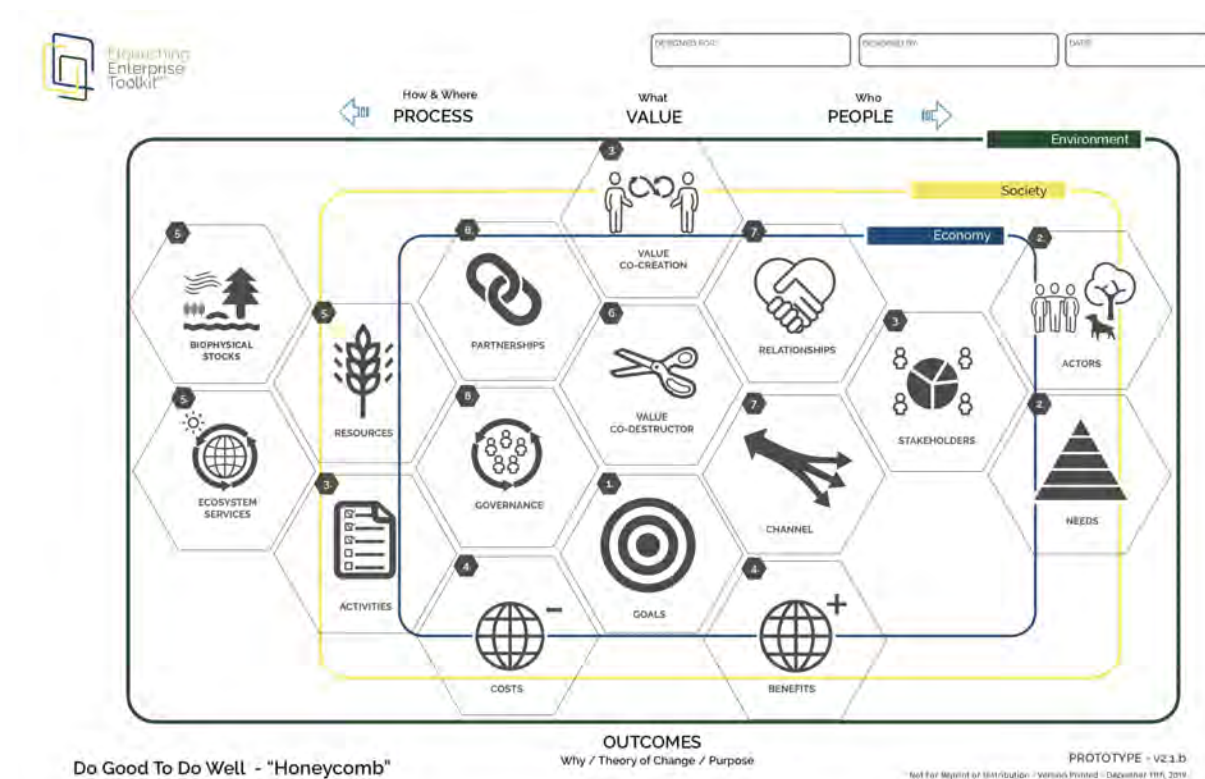


Illustration 9. Flourishing Enterprise 'Biomimetic' Canvas 2.1.c without Prompt Questions Version "Do Well To Good - Honeycomb" Designed to be used with Flourishing Enterprise Hex Cards v1.1 (also see Appendix E)

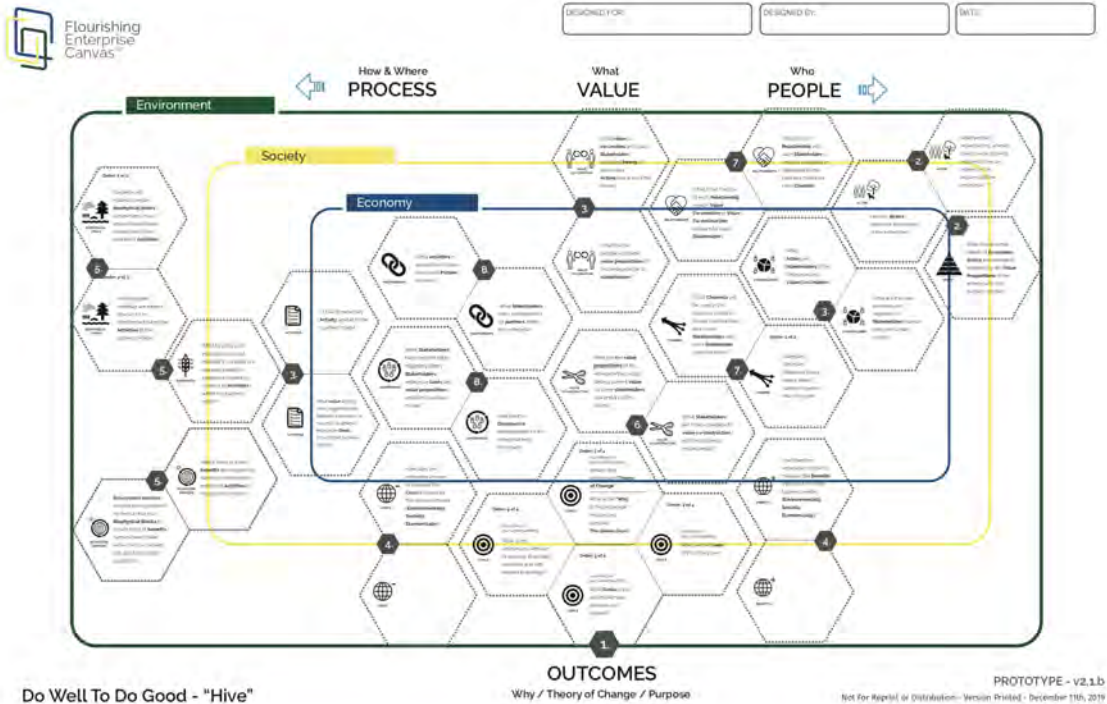


Illustration 10. Flourishing Enterprise ‘Biomimetic’ Canvas 2.1.c with Prompt Questions Version “Do Well To Good - Hive” Designed to be used with Flourishing Enterprise Hex Cards v1.1 (also see Appendix E)

Rationale for ‘Hive’ Canvas Design Decisions

My decision to work with the hexagonal structure in the exploration of “What might be a human centred, systemic design approach to Business Model Innovation” was purely an intuitive choice. It seemed to ‘fit’ in terms of the ability to link connections and narratives across the Questions, Contexts and Perspectives. The hexagon shape also makes space for patterns, giving space for a hypothesis that if we were able to capture the various configurations of the Hex Cards at convergence points during the dialogic design process, it might allude to, in the future, a Flourishing Enterprise Pattern taxonomy or at the very least a library of micro relationships that might help to understand the conditions needed to enable for Flourishing Enterprises.

Subtly the Hex Cards are about something else though. Expanding the Hex shape into the honeycomb visual made meta-narrative sense, a metaphor for a biomimetic enterprise. If are going to start an educational evolutionary movement in Andragogies and Pedagogies that teach design futuring for Flourishing, or the mental models for strongly sustainable, then should the tools for visual modelling not be inspired by the structures of nature? Just as the

ontological elements are informed by natural science should not our tools and visualizations also not reflect back the aesthetics and usability of a natural world?

7.0 Discussion

7.1 General Thoughts

The impetus for this major research project came from the desire as a First Explorer (and newly minted systemic designer) to solve feedback on universal themes of usability and accessibility specifically related to the visual and aesthetic interface of the FBC v2.0. It is clear however through the unfolding of workshop outcomes at UGhent and HalmstadU, plus consultations along the way with Jones and Upward, the data mirrors still broader themes in the First Explorer community that are out of scope of this research.

In this concluding section, it is a handful of these broader implicit themes that are offered for discussion through lens of the data collected to date using the FEC v2.1a and FEHC v1.0.

7.2 Flourishing Literacy and Competency Development

Based upon the workshops to date these are potentially future themes for idealization and realization:

1. *Flourishing Literacy and the competencies required to use the modelling tools for their intended purpose*
2. *The conflicting paradigms of Flourishing and the Profit-Normative fitting with the context of the participants - what methods are required to create narrative self awareness.*
3. *The Flourishing Enterprise Canvas and Flourishing Enterprise Hex Cards as teaching tools for Flourishing-as-Sustainability or part of new 'Flourishing' Androgogies.*

These themes were echoed by Ostuzzi and Hoveskog in their original experiment, mentioned in Section 2.0 as "First, depending on the background of the student, educators must carefully provide a targeted training in the different building blocks of the canvas. Second, educators shall explicitly emphasize the use of time perspective, i.e. the canvas can be used to create artifacts for near-, short- and long- term future. Third, educators shall help students to think in terms of relationships between the building blocks of the canvas (systemic view). Fourth, introduce word clustering in the goals, costs and benefits building blocks so to encourage students in generating ideas for all three contexts (environment, society and economy). Finally, it can be beneficial to incorporate peer-feedback

sessions (especially oral ones) where students can collaboratively create meaning and appropriate the concept of sustainability-as-flourishing.” (Ostuzzi and Hoveskog, 2019)

This was also suggested through facilitator reflection in the SENCO Rural Flourishing Social Enterprise Development Series. In the design of the Gigamap to articulate the systemic strategy in achieving SENCO’s Theory of Change, Lindsay Telfer and myself identified various mental states of participants and recognizing that we would need at some point have to develop a ‘Flourishing Social Enterprise Mental Model’ in an effort to achieve a ‘Flourishing Social Enterprise’ ecosystem. (Norris and Telfer, 2018)

Finally, work of the above nature, relating to Flourishing Competencies and Flourishing Literacy, is underway in the First Explorer network by Lean4Flourishing in the sustainable business start-up space. Lean4Flourishing is a First Explorer working with the Lean Start-up model and a founding Flourishing Enterprise Toolkit member. How using FEC v2.1a and FEHC v1.0 in their work towards Flourishing Competencies and start-up Flourishing business model innovation could be an interesting exploration.

7.3 Human Centred Graphic User Interface Design of Flourishing Business Modelling Tools

Assumption

The assumption that was made for this research project, was that ‘Flourishing Artifacts’ are the abstract visual interfaces to which strategy and strategic planning is developed. By their design, the GUI of ‘Flourishing Artifacts’ should allow for the visual discoverability of user narrative biases in the model. Through the selection of the design action research methodology, the feedback and reflection spaces that are part of the methodology may allow for measuring the usability and accessibility to help users move through processes of designing towards a strongly sustainable business model narrative.

In reviewing future potential evaluation parameters for the final qualitative data set in the ‘Triple Experiment,’ Dr. Francesca Ostuzzi recommended frameworks from the New ISO Standards for Usability ISO 9241-11. These frameworks would correlate to measuring the Flourishing Artifacts for its effectiveness as a GUI fit for purpose in modelling strongly sustainable narratives in the business model. Specifically human centred-design ISO 9241 - 220, usability evaluation ISO/HEC 25022 and quality of product ISO/HEC 25023. Within the new ISO standards, ISO 9241 - 220 defines human centred-design as “approach to systems design and

development that aims to make interactive systems more usable by focusing on the use of the system and applying human factors/ergonomics and usability knowledge and techniques” (Bevan et al, 2016)

While the new ISO standards are aimed at user interactions with software interfaces, consideration of the FEC v2.1a and FEHC v1.0 as interfaces could embody similar parameters as outlined in Quality of Use and Product Quality. For the outcome of Flourishing Business Modelling these parameters may re-frame the tool design to answer in greater depth - *How might we design be a human centred, systemic design approach to Business Model Innovation.*

By framing the tools for evaluation under the ISO/HEC 25022 Quality of Use and Product Quality assessments, we can potentially open up further iterations of FEC v2.1a and FEHC v1.0 from a Design-Theory lens of interaction. Interaction being defined as “a way of framing the relationship between people and objects designed for them—and thus a way of framing the activity of design (in this case the act of business modelling). Interaction is a key aspect of function, and function is a key aspect of design.” (Dubberly, Pangaro, and Haque 2009).

Evaluation for Quality of Use - TASK - ISO/HEC 25022:

ISO/HEC 25022 covers the measurement of *quality of use*. Using Measures of effectiveness efficiency and satisfaction will help support the qualitative evaluation of how the participants interact with the artifacts based upon ISO 9241 - 220’s definition of human-centred design. In Table 8 the “task” references the evaluation of the participant’s preceived ability to model using the iteration of FEC v2.1a and FEHC v1.0.

We would refer to the following ISO/HEC 25022 definitions to asses in the Quality of Use evaluation:

Effectiveness - outlined as completing a task completely and accurately while taking into account potential for negative consequences. This includes objective and perceived success.

Satisfaction - outlined as taking into account user experience as “positive attitudes, emotions and/or comfort resulting from use of a system, product or service” This relates to cognitive, affective and psychomotor responses of a user.

Effectiveness	Efficiency	Satisfaction
Task Completed	Task time	Overall satisfaction
Objectives achieved	Time efficiency	Satisfaction with features
Errors in a task	Cost-effectiveness	Discretionary usage
Tasks with errors	Productive Time Ratio	Feature Utilization
Task error intensity	Unnecessary actions	Proportion of users complaining
	Fatigue	Proportion of user complaints about a particular feature
		User trust
		User pleasure
		Physical Comfort

Table 8. Table 2 - Measures of effectiveness efficiency and satisfaction in a specific context of use ISO/IEC 25022

Evaluation of Product Quality - ARTIFACT - ISO/HEC 25023

ISO/HEC 25023 covers the measure of *quality of product*. We would use Measures of appropriateness recognisability, learnability, operability, user error protection, user interface aesthetics and accessibility for the qualitative evaluation of the outcomes generated by participants using the artifacts based upon ISO 9241 - 220's definition of human-centred design. In Table X. the "product" we would be evaluating is the iteration of FEC v2.1a and FEHC v1.0.

Appropriateness recognisability	Description completeness Demonstration coverage Entry point self descriptiveness
Learnability	User guidance completeness Entry fields defaults Error message understandability Self-explanatory user interface
Operability	Operational consistency Message clarity Functional customizability User interface customizability Monitoring capability Undo capability Understandable categorization of information Appearance consistency Input device support
User error protection	Avoidance of user operation error User entry error correction User error recoverability
User interface aesthetics	Appearance aesthetics of user interfaces
Accessibility	Accessibility for users with disability Supported languages adequacy

Table 9. Table 5/6 - Measures of usability attributes ISO/IEC 25022

7.3.1 ISO Human-Centred Usability Analysis for Flourishing Enterprise Canvas v2.1 and Flourishing Enterprise Hex Cards v1.0

Based upon the data collected to date, I have explored how *quality of use* and *product quality* from the participant data could be interpreted, to specifically evaluate the contexts of human-centred design as outlined in the ISO 9241-220 definition.

Evaluation for Quality of Use - TASKS

In *quality of use*, “task” would represent the ability of participants’ effectiveness, efficiency and satisfaction in modelling a Flourishing Business Model using the tools (FEC v2.1a and FEHC v1.0)

Effectiveness	Efficiency	Satisfaction
<p>Task Completed - Yes</p> <p>Objectives achieved - Further analysis of the final models developed will confirm if teams were able to design a viable Flourishing Business Model.</p> <p>Errors in a task - misplacement of sticky notes within the contexts of of the canvas</p> <p>Tasks with errors - misunderstandings of terms and questions may have led to mis-aligned sticky notes or question responses.</p> <p>Task error intensity - Fairly high in the beginning as participants learn to use the tools, this corrected itself as more clarity was achieved. Thus data showed various requests for a ‘manual’ at the tables.</p>	<p>Task time - Varied depending upon how engaged the groups were to model and their confidence level in using the tools (e.g - Getting started). Generally Teams achieved parameters set within the workshop modelling rounds</p> <p>Time efficiency - It took some time to understand questions and terms in order to complete each modelling task. This duration shorten over time.</p>	<p>Overall satisfaction</p> <p>71.4% found the hex cards useful for brainstorming</p> <p>81% found hex cards useful to facilitate group discussion</p> <p>Satisfaction with features</p> <p>85% found questions on hex cards helpful in modelling relationships across the canvas</p> <p>Discretionary usage</p> <p>As participants become more confident and were given permission to experiment with the tools, teams eventually worked through the canvas in whatever sequence that flowed and often out of sequence with the facilitation framework.</p> <p>Feature Utilization</p> <p>Teams with Canvas and Cards leveraged each tool differently at different stages of the dialogue and the modelling process.</p>

		<p>Proportion of users complaining</p> <p>Low - there were complaints regarding quantity cards and some regarding workshop set-up with wanting to have better physical access to canvas.</p> <p>Proportion of user complaints about a particular feature</p> <p>Hex cards - generally quantity of the cards</p>
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Table 10. - Table 2 - Analysis of Flourishing Enterprise Canvas 2.1 and Flourishing Hex Cards v1.0 leveraging Measures of effectiveness efficiency and satisfaction in a specific context of use ISO/IEC 25022

Evaluation of Product Quality - ARTIFACTS

In *product quality*, “artifacts” would represent the ability of the tools themselves (FEC v2.1a and FEHC v1.0) to support workshop participants in helping them understand how to confidentially model a Flourishing Business Model.

Appropriateness recognisability	<p>There was a general unclarity regarding terms and language as to how it related to a ‘business model’ This was generally seen when it came to the Environmental and Social Contexts like Biophysical Stocks, Ecosystem Services, Actors.</p> <p>There was confusion on where to start using both cards and canvas and general wayfinding throughout the process.</p>
Learnability	<p>Tools themselves required facilitation or ‘a manual’ to better understand expectations. Once teams understood and grasped the concepts it generally</p>

	<p>became clear how the system worked and they figure out their own modes of working.</p> <p>The variety of the tools - Hex + Canvas - allowed for more approaches. The Hex cards in some cases allowed for deeper discussions and more narratives to be crafted across the 3 Context.</p>
Operability	<p>There was some confusion between the use of the White Question cards and the Coloured Hex Cards - how to keep them organized</p> <p>Groups that worked with both the Canvas + Hex cards needed deeper clarity as how/when to link working with the two. Generally teams figured this out on their own depending on the cognitive styles and personalities of the group.</p>
User interface aesthetics	<p>Not much was accounted for in the data related to this. There was one mention from participants that had used and worked with the FBC v2.0 that the FEC v2.1a was much better and improvement upon v2.0</p> <p>Generally there was a sense that the Canvas and cards had clean, affable and stylistically relevant aesthetics.</p>
Accessibility	<p>There was much interpreted meaning that the Hex cards cognitively added to accessibility of the outcomes in that they supported different cognitive abilities, it was play-based and great for kinesthetic learners.</p> <p>Language and terminology was a barrier</p> <p>This was not mentioned in the data but the colours used on the canvas and cards may have some reproduction issues in black and white or with individuals with specific visual impairments.</p>

Table 11. - Table 5/6 - Analysis of Flourishing Enterprise Canvas 2.1 and Flourishing Hex Cards v1.0 leveraging Measures of usability attributes ISO/IEC 25022

7.4 Sustainability-as-Flourishing for Business Leaders in Sustainable Business Model Development.

Breuer et al. 2008, proposed a shared understanding of the benchmarks required in innovating towards sustainable business models for managers. They also laid out the cognitive absorption capacity needed of the users and facilitators in modeling using business logic as well as a sustainability logic into the new business model innovations.

They identified the following requirements related to a 'toolkit' that designers or facilitators of the business modelling process would need in order to create a sustainable business model:

1. A starting point for practitioners in an effort to have a reliable framework to model upon.
2. A repository of business patterns for context to support experimentation and evaluation.
3. A shared set of principles and criteria for evaluation to better understand sustainability trajectories.

Second, in the design and experimentation process of sustainable business models, participants are recommended to have principles articulated as competencies in working towards:

- A. Sustainability Orientation
- B. Extended Value Creation
- C. Systemic Thinking
- D. Stakeholder Integration

Finally, Breuer, Lüdeke-Freund, and Tiemann outlined tool criteria, the capacity for the design tools to provide the minimum requirements to support the above in the design and development process of a sustainable business model. This criteria is summarized as

Criterion 1 - Reframing an extended set of business model components - interpreted as the ability for the participants to be challenged on current business modelling logic and ontology to model within a business sustainability narrative.

Criterion 2 - Context-sensitive modelling - interpreted as contextual sensitivity to the actors and externalities that may impact the enterprise or firm and thus should be modeled by the design tool as awareness of a potential challenge or opportunity related to a sustainable business model.

Criterion 3 - *Collaborative Modelling* - interpreted as a non-optional co-creation process with stakeholders within a systemic context of the sustainable business model. Specifically this relates to facilitation and tools used in the innovation and/or design process.

Criterion 4 - *Managing Impacts and Outcomes* - interpreted as start with the end measurements in mind, understanding the sustainable business model design will differ from the one that is implemented. Follow-up work is required to translate the model into empirical measurements that solicit sustainability both monetary and non-monetary as well as both positive and negative outcomes of the sustainable business model's proposition.

Based upon the above, it is interpreted that the Business Modelling artifacts are part of a larger Business Model Innovation system, one might even say a sense-making through to a sense-making process, which is inherently driven by the human stakeholders participating in the process(s). As a result, while this research does not directly focus on the design and development of a human-centred facilitation process for the Flourishing Canvas, it does explore the potential consequences of the redesign of the FBC v2.0 on the modelling outcomes and user comprehension modelling for Flourishing. By designing and developing the FBC v2.0 with a more human-centred design - aesthetically and interactively - will we achieve our research outcomes and understand if the aesthetic design of the Flourishing Business Canvas v2.1 will end up in alignment with recommendations of literature in this space, as a result of the business model outcomes developed by these tools?

For Discussion - Alignment to Guiding Principles for Modelling (Strongly) Sustainable Business Models

The following, reviews Breuer, Lüdeke-Freund, and Tiemann's guiding principles recommendations in the design and experimentation process of sustainable business models. We have used this as a conceptual evaluation framework for data collected from participants in the workshop settings of Ghent and Halmstad, to explore if after using the FEC 2.1a and FEHC v1.0 participants might have the awareness to model sustainability-as-flourishing.

Guiding Principles (Competencies)	Signals from Participant Data	Alignment to SSBM Formative Proposition
Sustainability Orientation	<p><i>"Ecosystem services versus environment costs isn't totally clear to us."</i></p> <p><i>"What does the term biophysical stock Mean?"</i></p> <p><i>"The difficulty we had was to look at it from a different point of view than the usual economic point of view. Ecosystem services and actors were for use a little bit unclear"</i></p>	FP1. Strongly Sustainable
Extended Value Creation	<p><i>"You can have positive long term effect on business by considering environmental effects and working on its improvement. You can cooperate with your regulators to achieve strategic sustainable goals a make a world a better place. You can use model to any challenge you have to resolve it and identify even more interconnected challenges"</i></p> <p><i>"One value can distribute and also destroy another"</i></p>	FP2. Value Through Constellation

	<i>"The difference between values and goals isn't always clear."</i>	
Systemic Thinking	<i>"Practical thinking, solution oriented, long term thinking"</i> <i>"Synergy - looking the model as a hole - no company is an island"</i> <i>"Interconnectivity among different models"</i>	FP3. Systemic In Design
Stakeholder Integration	<i>"How to think of interaction between stakeholders"</i>	FP3. Systemic In Design

Table 12. Themes are related to Breuer et al, 2018 regarding guiding principles for competencies in designing (strongly) sustainable business models. (Breuer et al, 2018)

For Discussion - Enterprise Canvas v2.1 and Flourishing Enterprise Hex Cards v1.0 Alignment to Tool and Process Criteria for Sustainable Business Models.

The following, reviews Breuer et al, 2018 four criterion recommendations in the capacity for the design tools (e.g Flourishing Artifacts) to provide the minimum requirements to support management stakeholders in the design and development process of a sustainable business model. We have used this as a conceptual evaluation framework for data collected, to explore if after using the FEC 2.1a and FEHC v1.0 participants might have the awareness to model sustainability-as-flourishing.

Criterion	Signals from Participant Data
Reframing an extended set of business model components	<i>"A new perspective on the problem and goals we are working for."</i>

	<i>"Importance of taking social environmental and monetary into account"</i>
Context-sensitive modelling	<i>"Made us think of many actors and also governance"</i>
Collaborative Modelling	<i>"The modeling process is more important than the output"</i>
Managing Impacts and Outcomes	<i>"To divide the activities/measures by their overall purposes"</i>

Table 13. - Table 5/6 - Themes are related to Breuer, Lüdeke-Freund, and Tiemann, 2018 regarding use of the Flourishing Enterprise Canvas 2.1 and Flourishing Hex Cards v1.0 in creating (Strongly) Sustainable Business Models. (Breuer, Lüdeke-Freund, and Tiemann, 2018)

7.5 Non-Urban/Rural Flourishing Social Enterprise Development

SENCO, the Social Enterprise Network of Central Ontario, an initiative out of the Centre for Changemaking and Social Innovation at Georgian College was launched to be accountable, by 2022, in the establishment of 35 provincial partnerships, 7000 individuals engaged and 70 accelerated Strongly Sustainable social enterprises within the rural regions of Georgian College's 7 campuses.



Figure 1. Map of Georgian's 7 Campuses - retrieved from georgiancollege.ca/about-georgian/campuses/

As a matter of strategic importance, SENCO and The Centre for Changemaking and Social Innovation are positioning their tools and resources to help Georgian College become a leader within the larger provincial and national ecosystem of intermediaries pursuing social enterprise ecosystem development across our country. Through affinity relationships with other provincial ecosystem intermediaries, SENCO identified the FBC v2.0, as a tool to support the 70 accelerated Strongly Sustainable social enterprises benchmark. The FBC v2.0 was identified as ‘value-aligned’ to the CCSI’s strength-based community development principles while taking a systemic approach to enterprise and ecosystem design.

As part of SENCO’s deliverables aligning to 70 accelerated Strongly Sustainable social enterprises to support the design of a Flourishing Social Enterprise ecosystem, a curriculum framework to deliver the FBC v2.0s was researched and piloted to support individual community participants in developing start-up social enterprise ideas within a rural or non-urban context. (Norris and Telfer, 2018). The curriculum was examined from a systems context and articulated as a Gigamap (Fig 5.) as to how it might shift economic development towards supporting a future with a Flourishing Social Enterprise landscape.

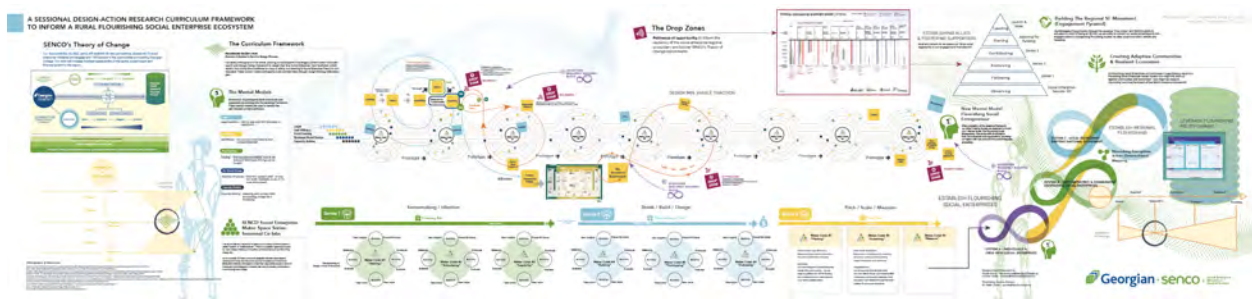


Figure 2. Gigamap - A Sessional Design-Action Research Curriculum Framework to Inform a Rural Flourishing Social Enterprise Ecosystem (Norris and Telfer, 2018)

The Gigamap (Norris and Telfer, 2018) with the embedded curriculum framework suggested an aspect of systemic design foresight in the modelling of a regional ecosystem of Flourishing Social Enterprises in economically disadvantaged resource networks, such as the rural regions surrounding Georgian’s 7 campuses. In examination of the Gigamap (Norris and Telfer, 2018), “the implications and possibilities of using the FBC v2.0 beyond bounded firms (and their actor ecologies), is a major focus of socio-ecological research in systemic design – much of the Politecnico di Torino program’s Systemic Design Field research has been oriented toward the renewal and sustainability of rural communities in Northern

Italy. What might be the Canadian corollary to their work, using the Flourishing Enterprise Innovation Toolkit? (Jones, citing Barbero, 2018)

Sensemaking of the Gigamap (Norris and Telfer, 2018) revealed several pathways in which SENCO's theory of change might be developed as an ecosystemic transition to Flourishing communities and economies. The real opportunity highlighted through the Gigamap was how regional actors might function in a cooperative ecology, through the use of the FBC v2.0 in combination with SENCO's role as an intermediary, and how might they identify mutually beneficial policies relevant to the flourishing socio-ecological model. Thus, the emergent research pathways could be loosely described as design responses toward flourishing and the conditions that might be required to enable socially-engaged education informing socio-ecological sustainability. (Jones, 2017)

These research pathways were identified as: 1) Contributions to Flourishing Enterprise Innovation Toolkit through the lens of the Rural Context; 2) New research and new service development in relationship to socio-ecological research in systemic design for Flourishing; 3) Curriculum tools and pedagogy for advancing community-engaged responses toward the design of flourishing communities and economies (Jones, 2017).

Also highlighted in the Gigamap (Norris and Telfer, 2018) was the potential to further develop *A Canvas for Flourishing Social Policy* (Jones, 2017) for use with municipal and regional government stakeholders. In addition to an opportunities to build out 'sister' Canvases to the FEC v2.1 and FEHC v1.0 that are contextualized by place or cultural.

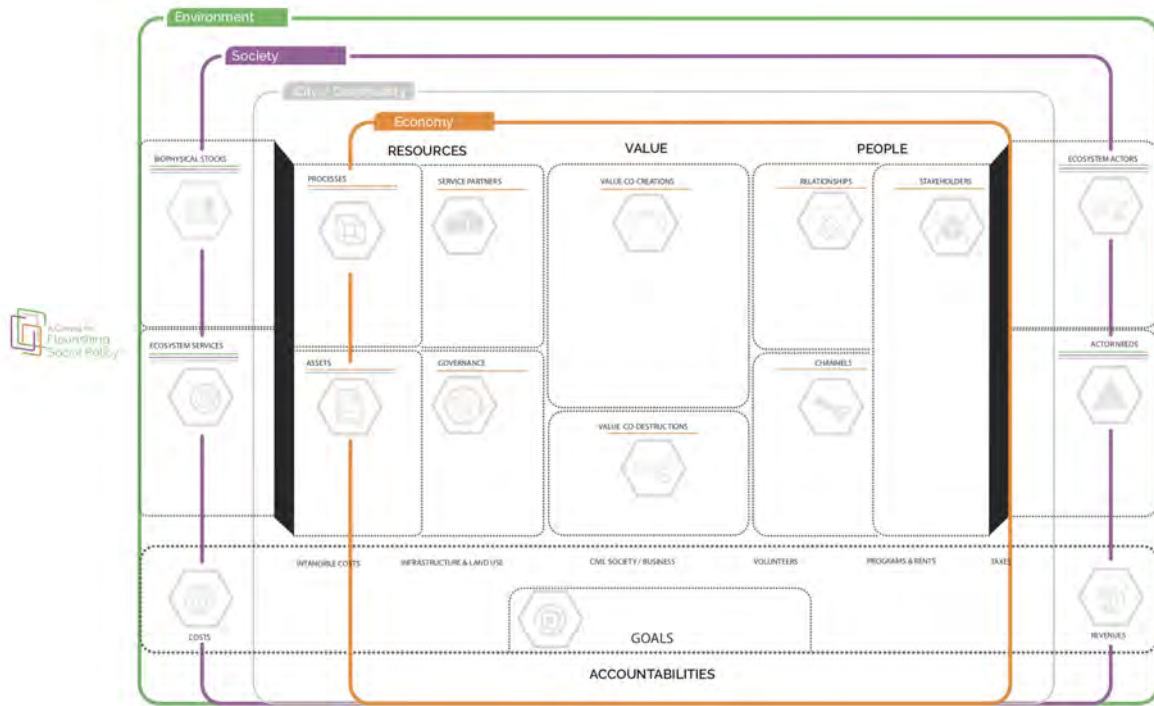


Figure 3. Iteration of A Canvas for Flourishing Social Policy based upon the visual design direction of the FEC v2.1



Image 3. A preliminary test of 'A Canvas for Flourishing Social Policy' based upon the visual design direction of the FEC 2.1 with associated Hex Cards at the SENCO Social Impact Gathering, June 2019 in Barrie Ontario. Used with permission.

7.6 Pattern Catalogue for Flourishing Enterprises

In this 'discussion' I am inquiring if the FEHC v1.0 could be documented over time and reveal patterns for Flourishing respective to possibility that the FEHC v1.0 had the ability to be geometrically connected into a hyperbolic plane as a potential way to inform a typology for Flourishing Enterprises. Again this is an extension to the Biomimetic conversation outline in Section 6.1.2.



Image 4. Hyperbolic Football. As Hex Cards are connected through various relationships they potentially could be stitched together to form a hyperbolic plane. These could be then be projected or calculated into a tiling pattern or 2 dimension edge to edge filling of the hyperbolic plane. Image retrieved from math.tamu.edu/~sottile/research/stories/hyperbolic_football/index.html

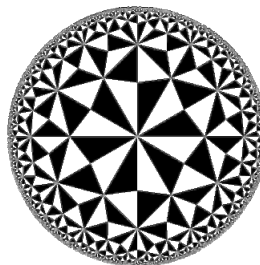


Image 5. Poincaré Hyperbolic Disc. A tiling pattern or 2 dimension edge to edge filling of the hyperbolic plane Retrived from mathworld.wolfram.com/PoincareHyperbolicDisk.html)



Image 6. The frilly forms of corals and sponges are biological variations of hyperbolic geometry, as seen here on the Great Barrier Reef, near Cairns, Queensland, Australia. Toby

Hudson [CC BY-SA 3.0] Retrived from theconversation.com/corals-crochet-and-the-cosmos-how-hyperbolic-geometry-pervades-the-universe-53382

Epilogue

**“The future cannot
be predicted, but it can
be envisioned and
brought into being.
Social Systems cannot
be controlled but can
be designed and
redesigned.”**

- Donella Meadows.

The tools we use to design and build with *matter*.

These tools help through their process of use, reflect to us the future we are modelling ourselves into. From the perspective of the Flourishing Imperative, I see Strongly Sustainable as a movement seeking - intentionally or unintentionally - to align to the Gaia hypothesis - “a posit that proposes living organisms interact with their inorganic surroundings on Earth to form a synergistic and self-regulating, complex system that helps to maintain and perpetuate the conditions for life on the planet.” (Wikipedia). The Flourishing Canvas thus takes a position within this movement that enterprises themselves are “living.” That they are social and economic constructs created by living organisms, supported by the planet, thus part of the perpetuation of life on the planet.

The tools we use to design a Flourishing Imperative Movement are thus interfaces to Flourishing Futures. Their use in the design process must be recursive in their feedback with the user, for the tool is modelling the Flourishing future but it is modelling the Flourishing mental model. The tool and the designer are in essence in a second-order cybernetics dance where, the Designer can see themselves as an active participant within economic, social and planetary systems through the modelling of a Flourishing Enterprise using tools to reflect back “Flourishing.”

Is the Designer the Flourishing Trim Tab or the tools - the Flourishing Canvas or Hex Cards?

In the Introduction I expressed that this was more an Action Manifesto than a fixed start and stop to a research project. I think the best way to articulate what this means for me moving forward, as a Designer, as a Systemic Designer for Flourishing is the clarity of my role now in answering this question - “How might we co-design the tools and interfaces we use to construct, socially, economically and digitally systems, to belong in the planetary ecosystems they are situated in so that we might enable the conditions of sustaining the possibility for human and other life to flourish on our planet for seven generations and beyond?”

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Appendices

Appendix A - Flourishing Business Canvas v2.0 (FBC v2.0)

Appendix B - Flourishing Enterprise Canvas v2.1.a *with* Prompt Questions

Appendix C - Flourishing Enterprise Canvas v2.1.a *without* Prompt Questions

Appendix D - Flourishing Enterprise Canvas v2.1.b - Honeycomb Canvas

Appendix E - Flourishing Enterprise Canvas v2.1.c - Hive Canvas

Appendix F - Permission of Use

Appendix G - Definition of Trim Tab

Flourishing Business Canvas v2.0

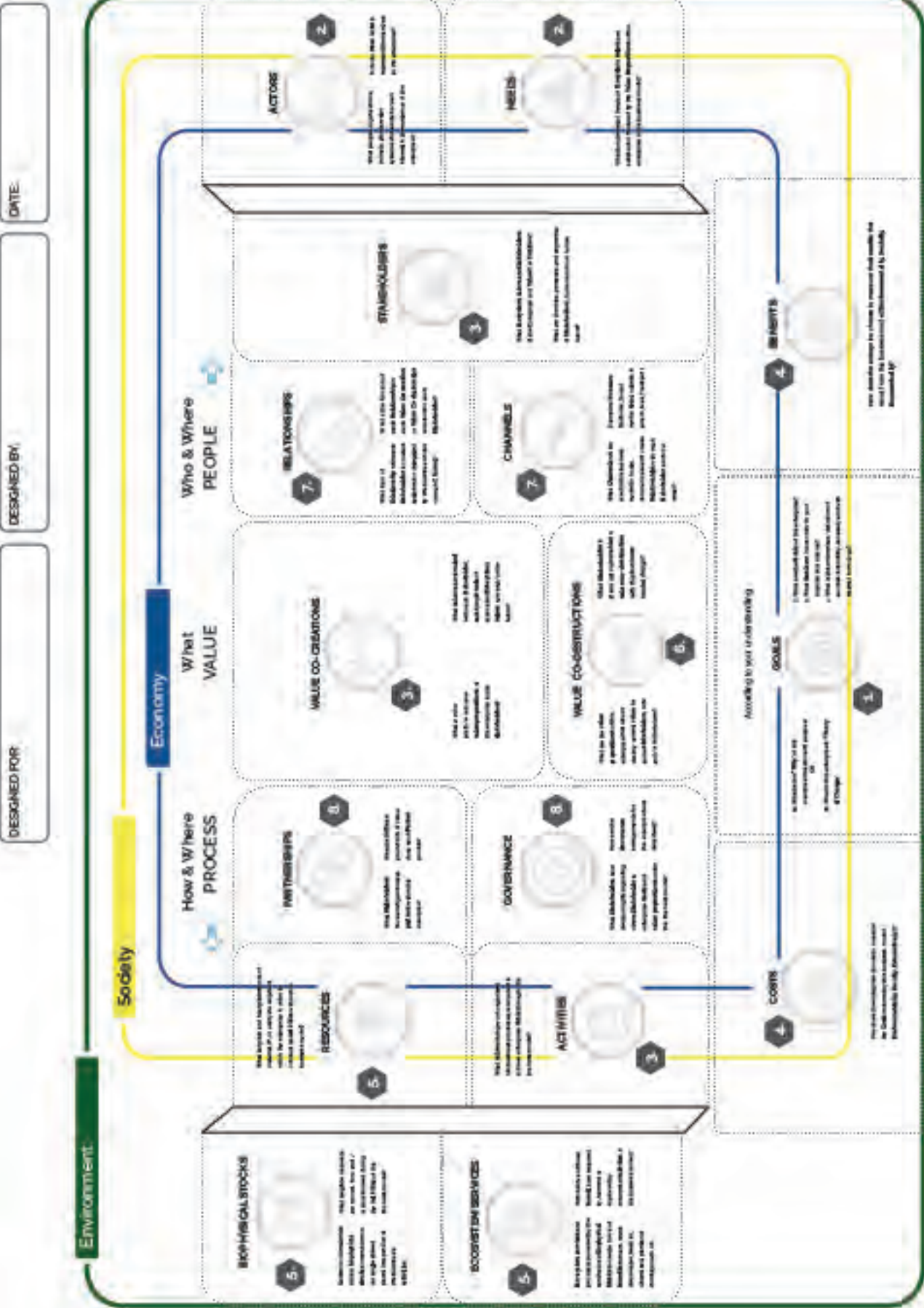
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Date:



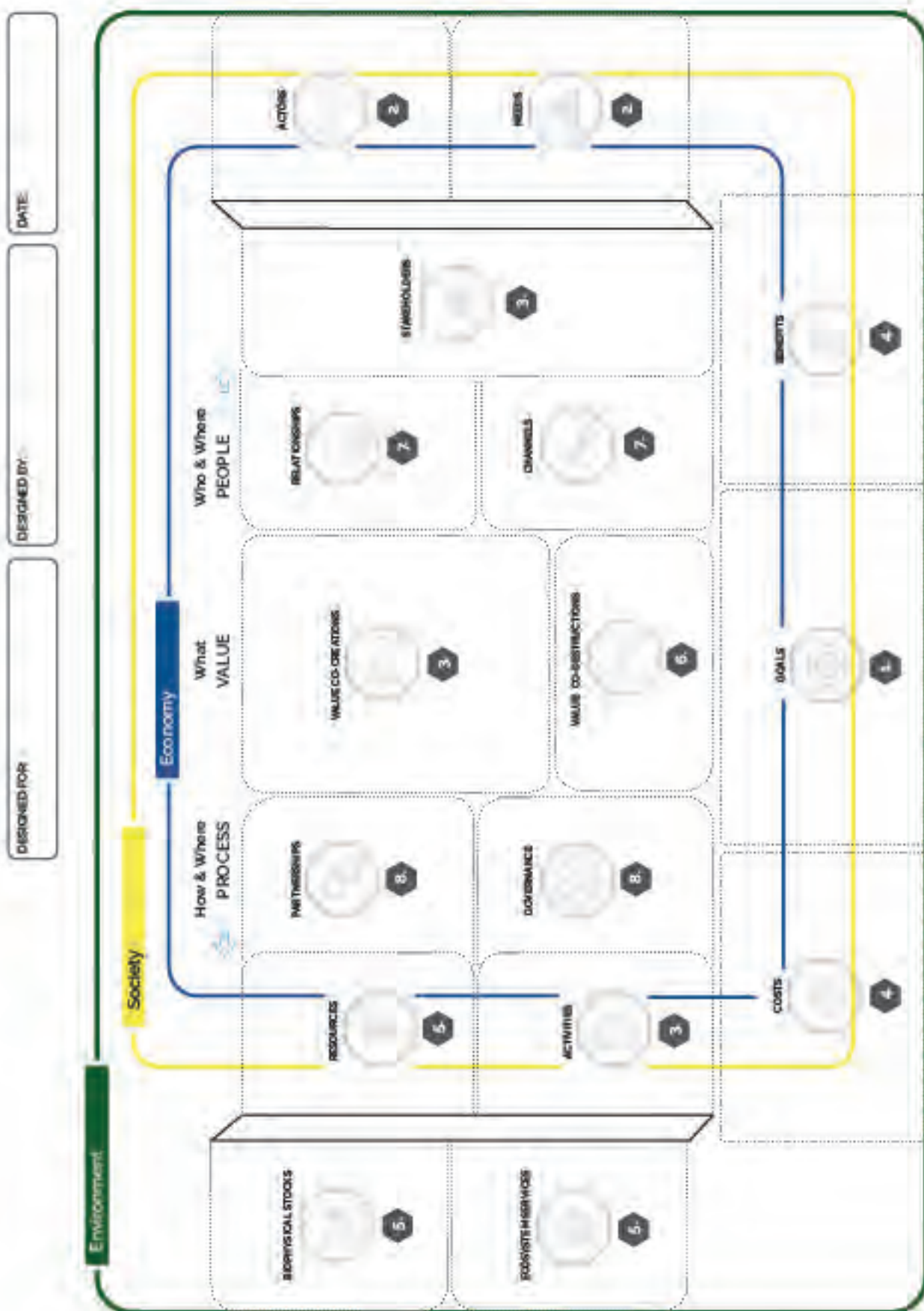
Appendix B - Flourishing Enterprise Canvas v2.1.a with Prompt Questions



Why / Theory of Change / Purpose

PROTOTYPE - v2.1.b
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Appendix C - Flourishing Enterprise Canvas v2.1.a without Prompt Questions

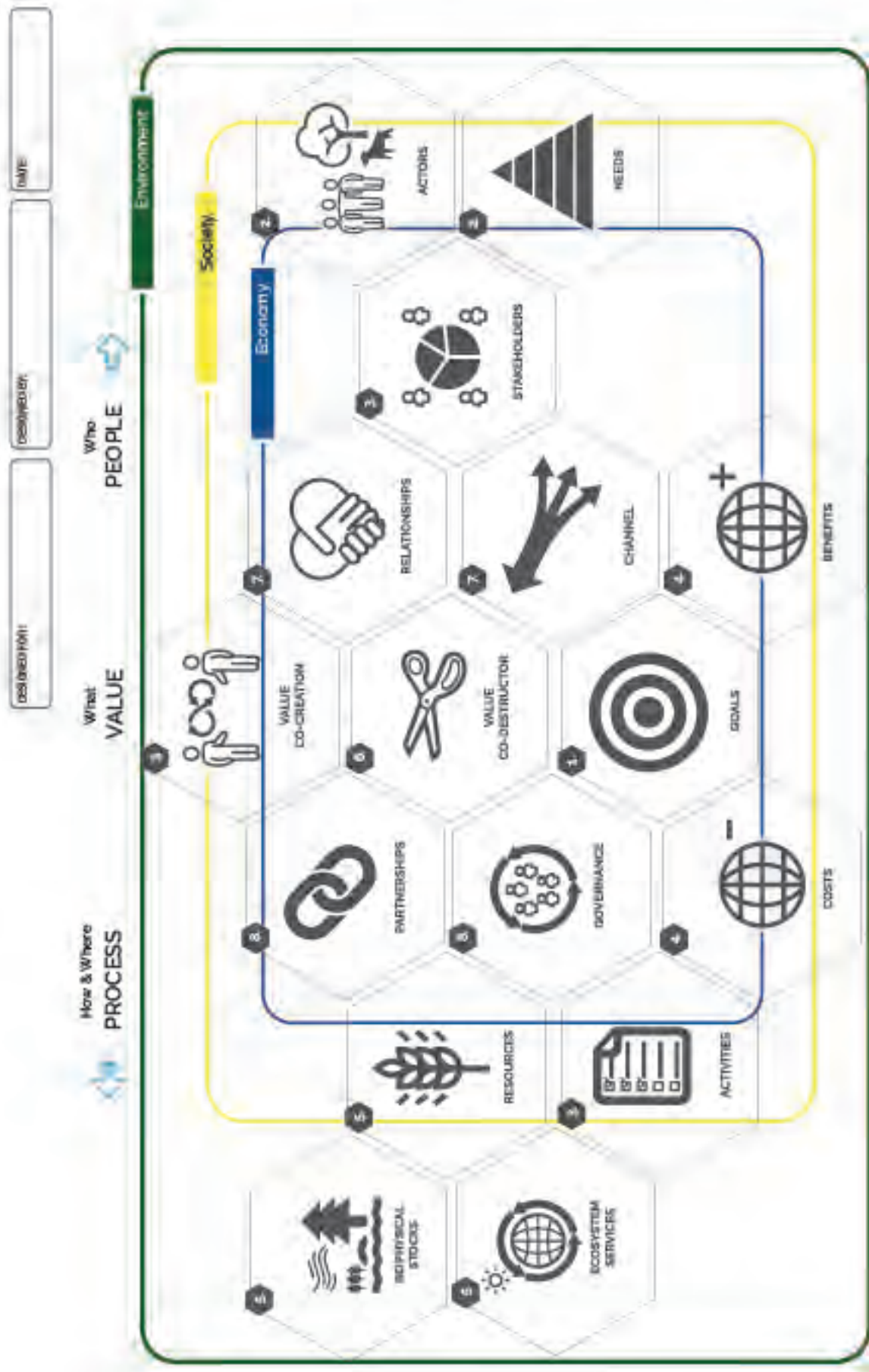


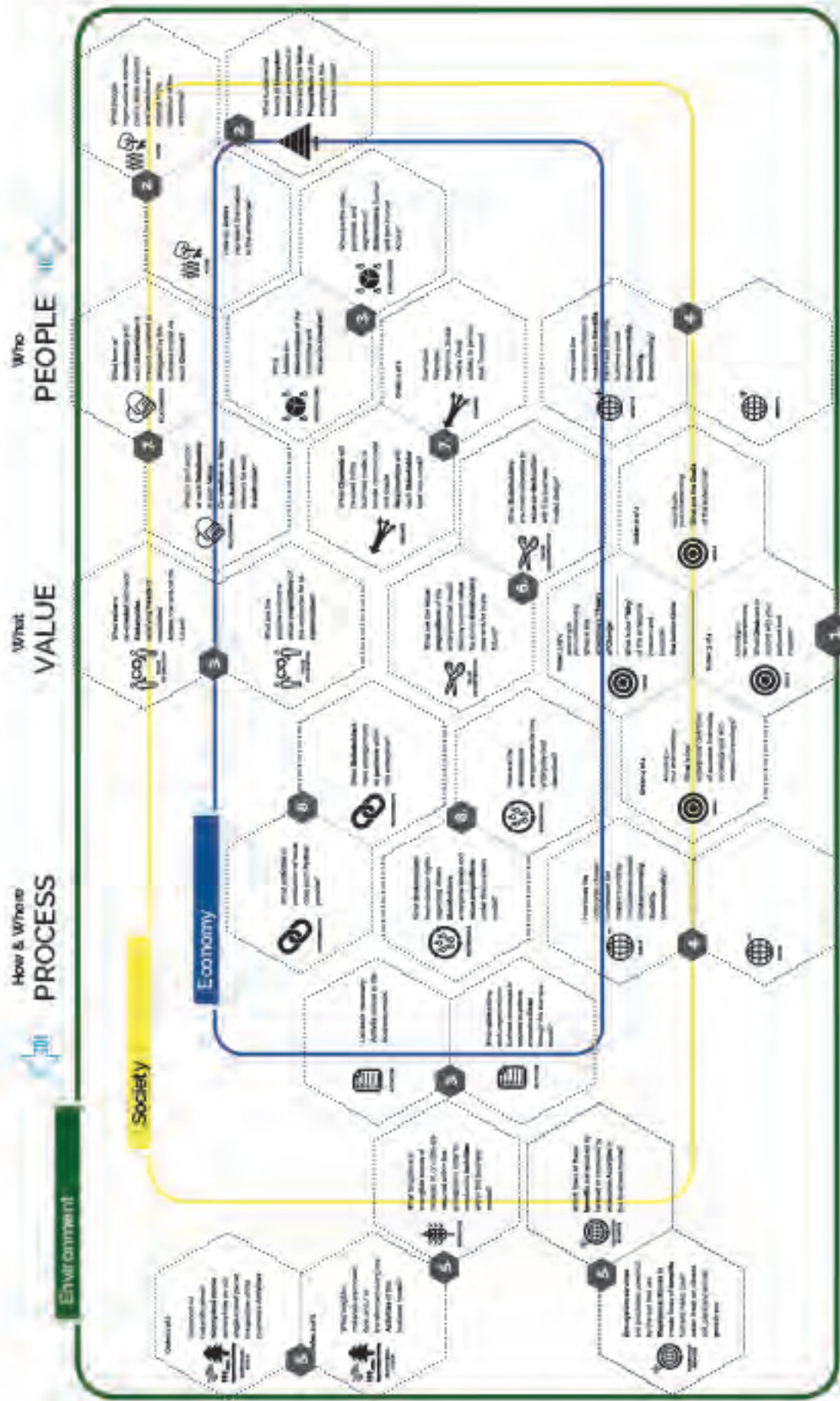
OUTCOMES

Why / Theory of Change / Purpose

PROTOTYPE - v2.1b
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Appendix D - Flourishing Enterprise Canvas v2.1.b - Honeycomb Canvas





OUTCOMES

Why / Theory of Change / Purpose

Appendix F - Permission of Use

Flourishing Business Canvas v2.0



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Flourishing Business Canvas v2.1 and Flourishing Enterprise Hex Cards v1.0

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For more information on joining the First Explorer program visit.

<https://www.flourishingbusiness.org/the-toolkit-flourishing-business-canvas/first-explorers/>

Appendix G - Definition Trim Tab

A trim tab is a small six-inch wide strip of metal attached by hinges to the trailing edge of a ship's rudder. As an engine's hydraulics force the Trim tab into the path of oncoming water, the pressure generated against it assists the rudder in making its turn. It was invented by Buckminster Fuller for the US Navy during WWII.

Buckminster Fuller went on to use the trim tab as a metaphor. He used it to point out that anyone can act as a trim tab, in part by recognizing the potential downstream influence of small, high-leverage actions pointing in the right new direction. The trim tab's tiny movement has leverage. The right shift in the right place at the right time with the right tools. (Farris, 2018)

"Trim tab projects and people not only solve multiple challenges at once with systems-solutions, they also dis-solve the underlying circumstances that lead to those those challenges" (Wahl, 2020)