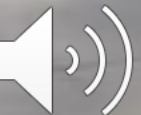




COMPARING THE METHODS OF A3 AND CANVAS

Lauri Koskela, Rafaella D. Broft, Ergo Pikas and Algan Tezel



Introduction



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- Around ten years ago, two methods for collaborative problem-solving and designing solutions, A3 and Canvas, emerged in the English language literature, and started to rapidly diffuse
- These methods came out of the blue, as the mainstream management research has been focusing on decision making, rather than problem-solving or designing that are covered by A3 and Canvas
- A3 has its origin in the Toyota Production System, while Canvas is based on a doctoral dissertation in information systems, and consolidated in a (partially) crowd-sourced business book





IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

Introduction (continued)

- These two methods seem to have many similarities, besides differences
 - Both support collaborative working and rely on visual structuring of processes or their outcomes.
 - Their application areas are to some extent overlapping (problem solving involves designing the solution, and in turn, designing often starts from a problem).
- This presentation analyzes and compares A3 and Canvas
 - How are these two methods similar or dissimilar?
 - Are there underlying theories that could shed new light on both methods?
 - Can a better understanding of these methods benefit their use in different contexts and scenarios?



A3



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- A single sheet of ISO A3-size paper (297mm x 420mm) that is used to structure, summarise and document a thinking process
- This thinking process is generally based on Shewhart's Plan-Do-Check-Act (PDCA) cycle for problem solving and continuous improvement.
- The A3 process emerged at Toyota as part of the Toyota Production System (TPS) in the 1960s to summarise *kaizen* circle activities
- The A3 process caught the attention of Western observers of the TPS at the end of the 1990s, and after almost a decade, a series of books in English were published on A3s

An A3 typically consists of eight activities/sections



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

Step 1: Background	Step 5: Proposed countermeasures
Step 2: Current conditions	Step 6: Plan
Step 3: Targets	Step 7: Impact
Step 4: Analysis	Step 8: Follow-up

Business Model Canvas (BMC)



IGLC 28

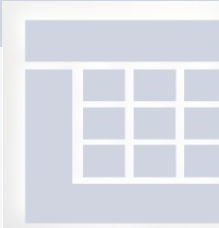
BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- The originators had two goals in mind for developing the BMC (Osterwalder and Pigneur 2012):
 - (1) it should aid stakeholders in understanding a business model, and
 - (2) it should improve the communication based on shared understanding.
- The BMC specifies nine elements and the relationships between the elements
- The visual template is organised and composed in a way to support the intuitive recognition of relationships between the elements



Business Model Canvas template



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
	Key Resources		Channels	
Cost Structure			Revenue Streams	



Evolution of the methods



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- In addition to problem-solving A3, new types of A3 have emerged: status A3, proposal A3 and strategy A3
- General conventions across all A3 types
- Canvases for new contexts suggested: Project Canvas, and many others
- Design principles developed for conceiving and producing Canvases :
 1. ontology development for problem framing,
 2. visualisation for facilitating the creation of shared understanding, and
 3. implementation in the co-design process.





IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

Comparison: similarities

- A visual and succinct presentation, allowing an *at a glance observation*;
- About the creation of a *shared understanding* of a complex process or system;
- Documenting and describing *the current state* (how things are done);
- Presenting a basis for *future targets* (how things could be improved);
- Facilitating the *documentation* and diffusion of outputs;
- Providing *collaborative* document development to a group;
- Facilitating a *structured* group discussion and decision making;
- Following a predefined, *standard* template consisting of building blocks;
- Presenting a *shared language*;
- Serving as a reference to group/organisational *memory*;
- Focused on *a subject*, including its core dimensions;
- Demonstrating how different parts of a process or system *interrelate* to each other;
- Requiring *evaluation/validation*.



Comparison: differences



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

A3

Canvas

Describing a thinking process – often a sequential problem-solving process	Describing a system with coherent parts, a constellation, around a value proposition – often for mapping out a business with its key driver parts
Preference for a given size of the document (the A3)	Flexible regarding the size of the document (a single sheet of paper)
Fact-based	Opinion or idea-based
Often forcing groups to think about the root-causes of issues and best course of action	Often forcing groups to think about the value provided to customers
Executed iteratively as a project with predefined start and end dates, and current versus target states (goals). When the target state has been reached, it provides the basis for a new current state for another A3 project.	Executed as a snapshot of a system, leading to discussing, mapping, designing and inventing new systems. Canvas needs to be evaluated continuously if the model is to fit the environment, so the individual building blocks need to be reviewed and updated. They also provide the basis for new system propositions.

Theoretical explanation: similarities



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- Both A3 and Canvas can be explained through
 - Rapid and immediate access to information, supported by System 1 of cognition (Kahneman 2011);
 - Spraction (Tversky 2015) – when thought overwhelms the mind, the mind puts it into the world;
 - The promotion of the creation of common ground and shared understanding, necessary for both communication and collaboration (Koskela et al. 2016).



Theoretical explanation: differences



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- A3: PDCA cycle, based on Aristotelian epistemology
- Canvas: Identifying ontologically different entities (parts of a system); fit or coherence between parts of the system (in this case, a business model)

Tendencies towards epistemological dilution

- An owner giving the following instruction on the format of the A3 to be submitted (Butcher 2019): “The content may be formatted and organised in whatever manner the proposer desires. The proposer may place whatever content they desire on the A3.” The idea of PDCA cycle has been lost.
- At least half a dozen Project canvases have been proposed, all different to each other. The idea of ontologically distinct entities and especially their relations has probably been lost in many cases.

Application in construction



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- Both methods facilitate the collaborative solving of ill structured problems
- Such problems exist abundantly in construction, and often they can be solved efficiently only through collaboration – thus there is demand for these methods in construction
- The use of A3-s has already started but full potential not reached
- The use of Canvases has not really started

Extensions into construction



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

- A ‘Construction Project Canvas’ could support the team members to move away from a business-focus to a focus on the entire project system respectively the whole supply chain
- ‘Construction Logistics Canvas’, ‘Collaborative Planning Canvas’ or a ‘Use of Modularity and Prefabrication Canvas’
- ‘Supply Chain Management Canvas’: project independent value proposition of a network of organisations that have decided to establish long-term relationships

Conclusion

- Due to epistemological dilution, adaptation of A3 and Canvas to new contexts often less successful
- Two countermeasures:
 1. Theoretical research
 - Decoding of the underlying concepts of both A3 and Canvas so that these ideas could be presented more clearly
 - Creation of overarching design rules covering both A3s and Canvases
 2. Applied research
 - Authoritative A3 and Canvas templates for specific contexts and use scenarios in construction



IGLC 28

BERKELEY, CA 6-12 JULY 2020

28th ANNUAL CONFERENCE OF THE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

Thank for your attention!