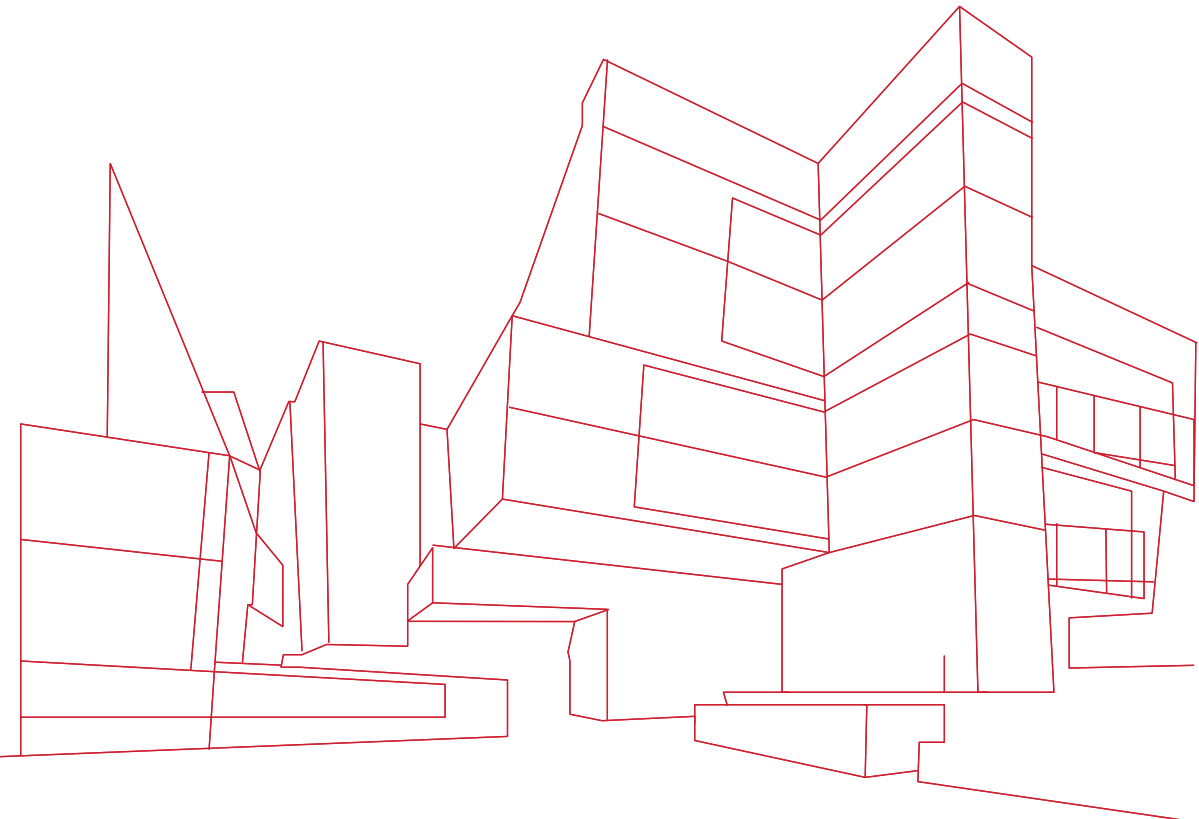


Oakland, USA

Development of a Design Competence Model for Learners of Human Centered Design

Author – Christi Zuber

Aspen Labs/ Coventry University



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Christi Dining Zuber, RN, MHA

Aspen Labs and Coventry University

Nice to meet you...

► Me:

- Registered Nurse, hospital administrator, business consultant, speaker and published writer on [service design and innovation](#)
- 23 years of experience in healthcare, 16 years of experience in service design and innovation creating and leading teams within large healthcare organizations
- PhD research aimed at developing an approach to service design and innovation that is based on the needs of people trying to learn and apply design to lead change in healthcare, education, faith-based organizations and social services.

► Innovation Catalyst Program:

- A program run by the Center of Care Innovations, based in Oakland, California, created for healthcare “Catalysts” who champion innovation within their hospitals and clinics.
- The Innovation Catalyst program supports leaders who want to learn human-centered innovation mindsets and methods to help drive different ways of working in their organizations.
- Learning takes place within their own work environment.
- The Innovation Catalyst Program has been in place for 4 years and was awarded a DMI Design Value award in 2015.

Background / Context

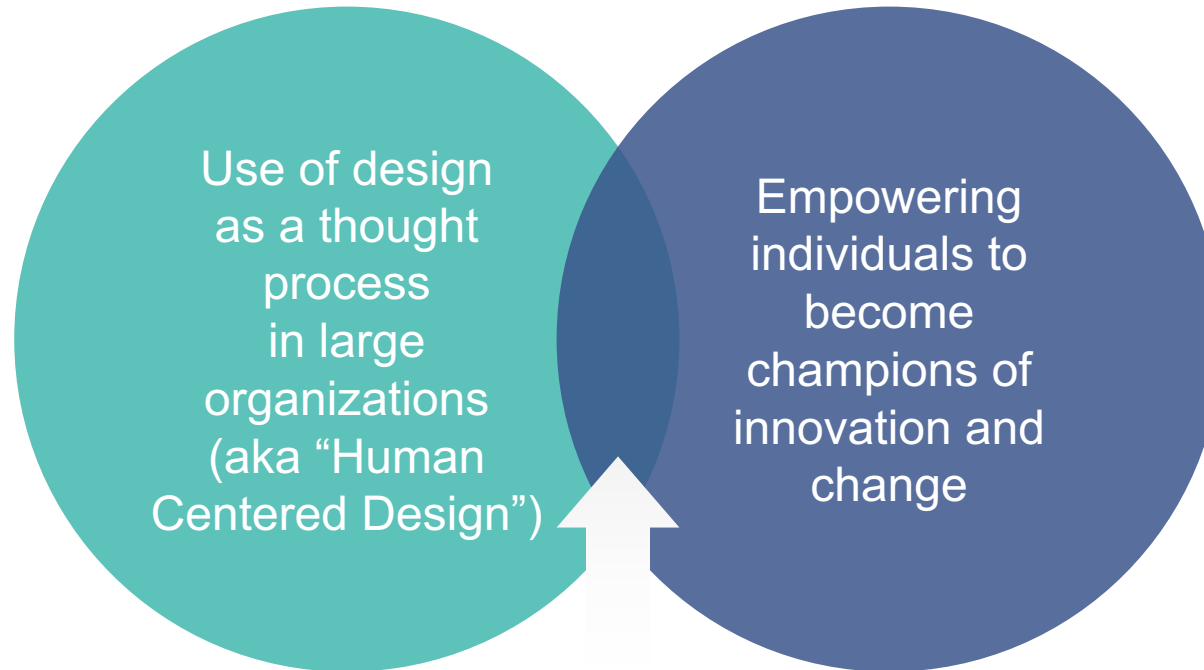
Why this is important to me

“ My expertise is medicine.
We're part-timers when it comes to innovation.
And what we want are things that make us
REALLY good part-timers. ”

- Physician Leader -



Overview – PhD research focus



Individual experiences in learning and applying Human-Centered Design for innovation within large organizations

Contribution to knowledge

Literature

- ▶ The literature has discussed the **phases** of design (Brown, 2009; Liedtka, 2015) and of organizational legitimacy (Carlgren, 2016) on how design thinking, or Human Centered Design, can **build innovation capability** in an organization (Carlgren, 2014). Studies of **students** have explored how novice multi-disciplinary teams learn and successfully practice HCD in an **academic setting** (Siedel and Fixson, 2014) and how **experts** practice design in **consulting settings** (Haragon 2012)

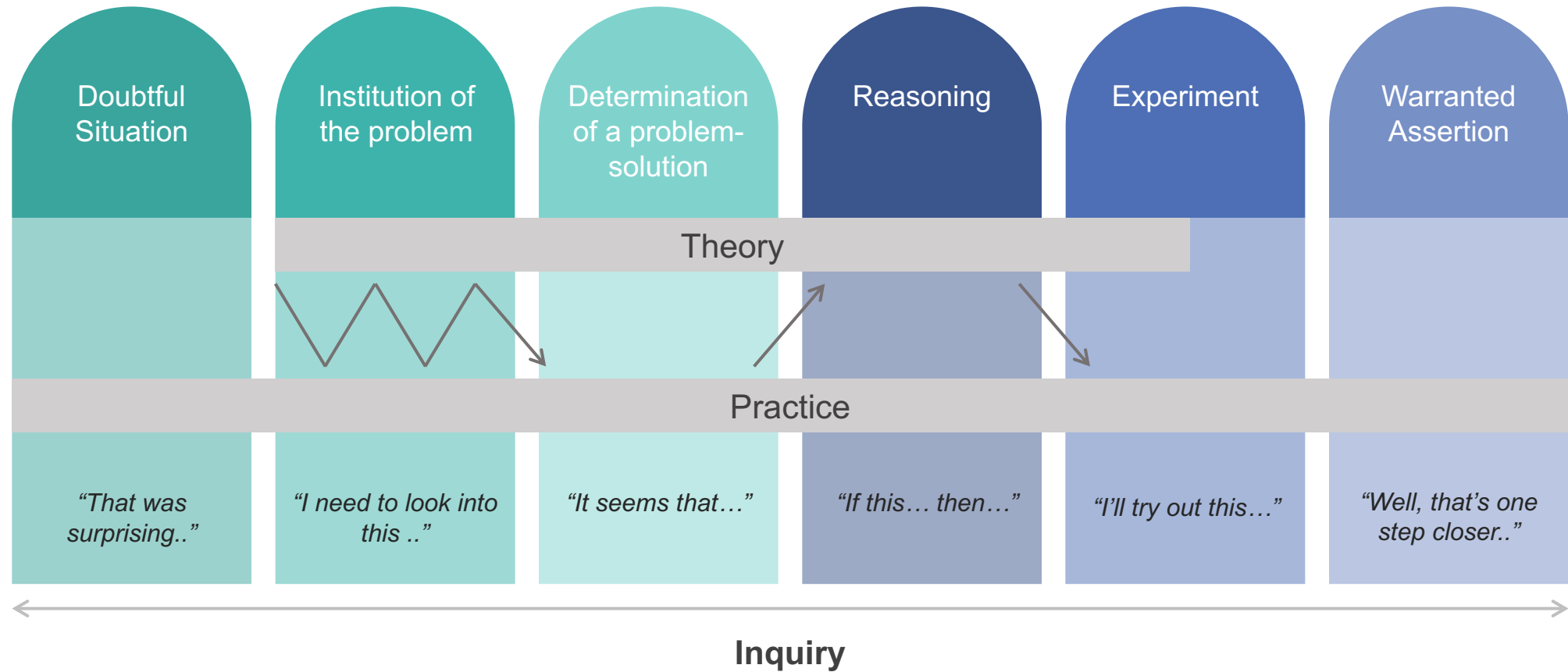
Gap

- ▶ There is a gap in the literature in studying the phenomena of novice HCD learners in organizational settings, particularly within healthcare.



Research Methods

An overview of Deweyan inquiry as the foundation*



*image illustration inspired by Stompff, 2012



@czuber

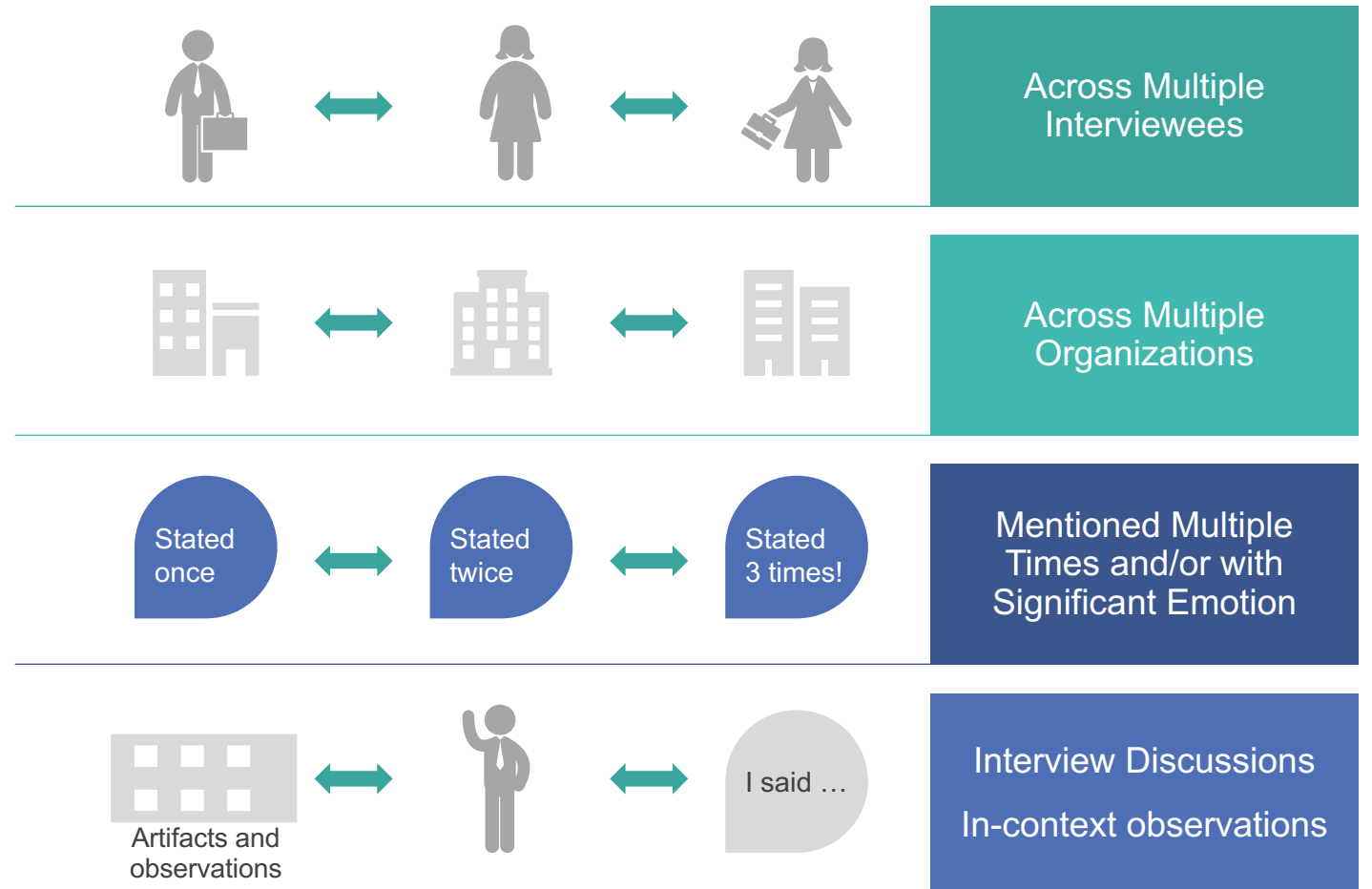


zuber@uni.coventry.ac.uk

Thematic Analysis

Used to analyze classifications and present themes (patterns) that relate to the data, it utilizes interpretations (Boyatzis, 1998). Codes developed for ideas or themes are then linked to raw data as summary markers for later analysis.

Comparing the relative frequencies or themes of topics allows the researcher to determine the relationships between concepts and compare them with replicated data (Alhojailan, 2012).



Context and Method

► Innovation Catalyst Program



“ They (the coaches) taught us that there is a teachable, learnable skillset for innovation, and also a level of skill and expertise that we can all aspire to. ”

George Su, MD
Associate Professor of Medicine, San Francisco General Hospital
per Innovation Catalyst video interview

Data Source

Participants	
Organizations	# learners
Alameda Health System	3
Asian Americans for Community Involvement	2
Central City Concern Clinic	2
Kaiser Baldwin Park Medical Center	3
Kaiser Coalition of Unions	3
Kaiser Garfield Innovation Center	2
Kaiser Greater Southern Alameda Area Medical Center	2
Kaiser Los Angeles Medical Center	3
Kaiser South Bay Clinic	2
Lifelong Medical Care	2
Olive View UCLA Medical Center	2
Oregon Primary Care Association	2
Petaluma Health Center	2
Planned Parenthood of Orange County	2
Planned Parenthood of San Bernardino counties	2
Rinehart Clinic	2
Riverside County Health System	3
San Diego La Maestra Family Clinic	2
San Francisco Department of Public Health	2
San Jose Foothill Family Community Clinic	2
Yakima Valley Farm Workers Clinic	2

Data Sources

- ▶ In person workshops
- ▶ Individual coach and catalyst sessions
- ▶ Coach peer group calls
- ▶ Catalyst peer group calls
- ▶ Catalyst learning exchanges

Data collection

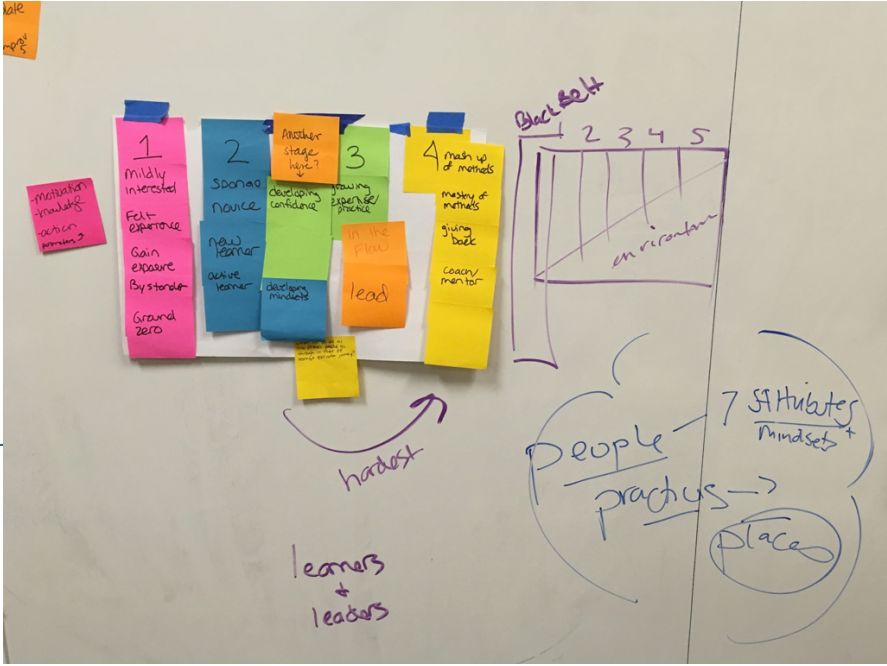
- ▶ 41 hours discussions recorded and transcribed; 20 hours observations
- ▶ One year in duration

Participant co-design

FEEDBACK SESSIONS

User feedback session showing first prototype shown on Post-It notes in the foreground.

First sketches of learning model developed with Catalyst coaches, demonstrating a shift over time and additional stages added.



Inspiration for Model Development



Inspiration for Model Development

Model images from Dreyfus (1980) and Benner (1982)

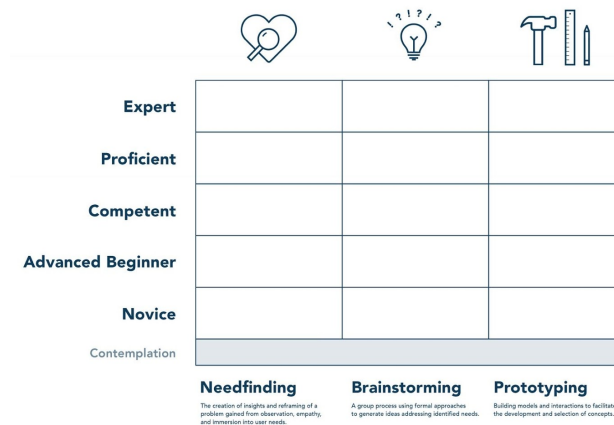
Reproduced from original document
(Dreyfus and Dreyfus 1980)

Skill Level \ Mental Function	NOVICE	COMPETENT	PROFICIENT	EXPERT	MASTER
Recollection	Non-situational	Situational	Situational	Situational	Situational
Recognition	Decomposed	Decomposed	Holistic	Holistic	Holistic
Decision	Analytical	Analytical	Analytical	Intuitive	Intuitive
Awareness	Monitoring	Monitoring	Monitoring	Monitoring	Absorbed

Benner's model of skill acquisition in nursing
(copyright Benner 1982)



Design Competence Model
(creative commons Zuber 2017)



Insights

Design Competence Model



Expert			
Proficient			
Competent			
Advanced Beginner			
Novice			
Contemplation			

Needfinding

The creation of insights and reframing of a problem gained from observation, empathy, and immersion into user needs.

Brainstorming

A group process using formal approaches to generate ideas addressing identified needs.

Prototyping

Building models and interactions to facilitate the development and selection of concepts.

- ▶ Addition of contemplation
- ▶ Application of 5 stages of learning to HCD
- ▶ Refined categories of skill development

“ I got in front of some of our leaders and physicians at a meeting and I asked them to draw their experience. They didn't do it. And I realized that I didn't have anything in my bag of tricks after that. I was stuck.




– Catalyst learner at 1 month

I'm feeling a lot better about my own skills now. The other day I took what I'd learned (in a different program) about how and why people resist change, and it made me look at field testing my prototypes differently. Then it wasn't just about the idea, but the chance for people to experience it and have an opinion that was heard. I could weave those things together as I spoke with them and it gave me a whole new approach. I was like, light bulb!” ”

– Catalyst learner at 5 months

Insights

Design Competence Model

Expert			
Proficient			
Competent			
Advanced Beginner			
Novice			
Contemplation			
	Needfinding <small>The creation of insights and reframing of a problem gained from observation, empathy, and immersion into user needs.</small>	Brainstorming <small>A group process using formal approaches to generate ideas addressing identified needs.</small>	Prototyping <small>Building models and interactions to facilitate the development and selection of concepts.</small>

▶ This study has begun to **reframe learning and application of HCD into stages**, developed as a design competence model that could potentially be used to create more nuanced learning programmes or learner competency evaluations.

▶ University to organization transitions
Learner curriculum
Team and individual assessments
Mentoring/coaching guidance

What's next



- ▶ Used to adjust IBM's design program
- ▶ Being tried as approach to develop curriculum in 2 university settings
- ▶ Creating tools to make the model more easily used by teams

- ▶ Interest is there, but too early for understanding impact/output
- ▶ Open to suggestions about how to further the work

