Critical Software Projects with Success
a deep dive to the right methods

Abstract

Critical Software projects with Success –a deep dive to the right Methods

This presentation will go into depth in the Methods I use as a Critical Project Manager to ensure that the Software Project will be delivered with Success. I use these methods regardless of a start-up of a new project or to turn around a challenged project.

In my presentation Hybrid Project Management from 2020 the purpose was to give you and introduction to Hybrid Project Management and a high-level introduction to methods like Project strategy and planning using Cynefin analysis and future backwords, Function Point Analysis, Project and Sprint estimation, as well as project monitoring and agile testing, will be used to show the benefits from a team as well as a leadership perspective. This is the Deep Dive into these methods but also the tools and techniques behind them.

Regardless of what type of methodology I use – I have my preferred Methods that I always use – such as:

- Future Backwards

- Cynefin

- Planning Poker

- Function Points Analysis and diagramming technique

- Consensus decision-making

This presentation will provide a deeper dive into these methods and how they are used in the lifecycle processes for Planning, Scope Management and requirement traceability, Test Management (with a springe of Agile testing) and Project Monitoring and Control.

Tips and tricks to a successful Software Project

Ps. To get the optimal out of this presentation I recommend that you see the presentation "Hybrid Project Management – From challenged project to success" either before or after.

Event: Great IT Pro Webinar

Place: Virtual, USA

Time: 14th of January 2021

Host Organisation: CAI – Great IT Pro

IP by Green

Christine Green

Critical Software projects with Success –a deep dive to the right Methods

 Talent Triangle Category

January 14th, 2021

11:00 am EST

www.greatpro.org

THE Great IT Professional™

CHRISTINE GREEN

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Independent Senior Consultant

20+ years of experience in the software industry. Focus on Process Improvement, Complex and Critical software projects. Software delivery with success.

Worked on Critical contracts and projects for both government and private sector since 2003. Independent Consultant since 2017. Current assignments Critical Project Manager and Contractual Advisor

M.Sc. in Mathematics and Computer science

Certified - PMP, CSM, LSS BB, CFPS

www.linkedin.com/in/christinegreendk

President of IFPUG 2019-2021
CFPS Fellow since September 15th 2020

A follow-on Presentation

Christine Green

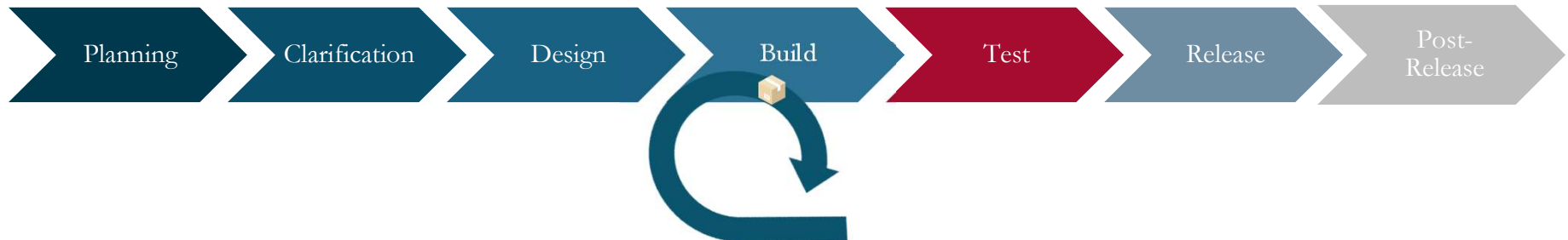**Hybrid Project Management – From challenged project to success**

Talent Triangle Category

September 17, 2020
11:00 am EST

www.greatpro.org

THE Great IT Professional.

- A Presentation from September 2020
- Interest in the Methods and Techniques I used

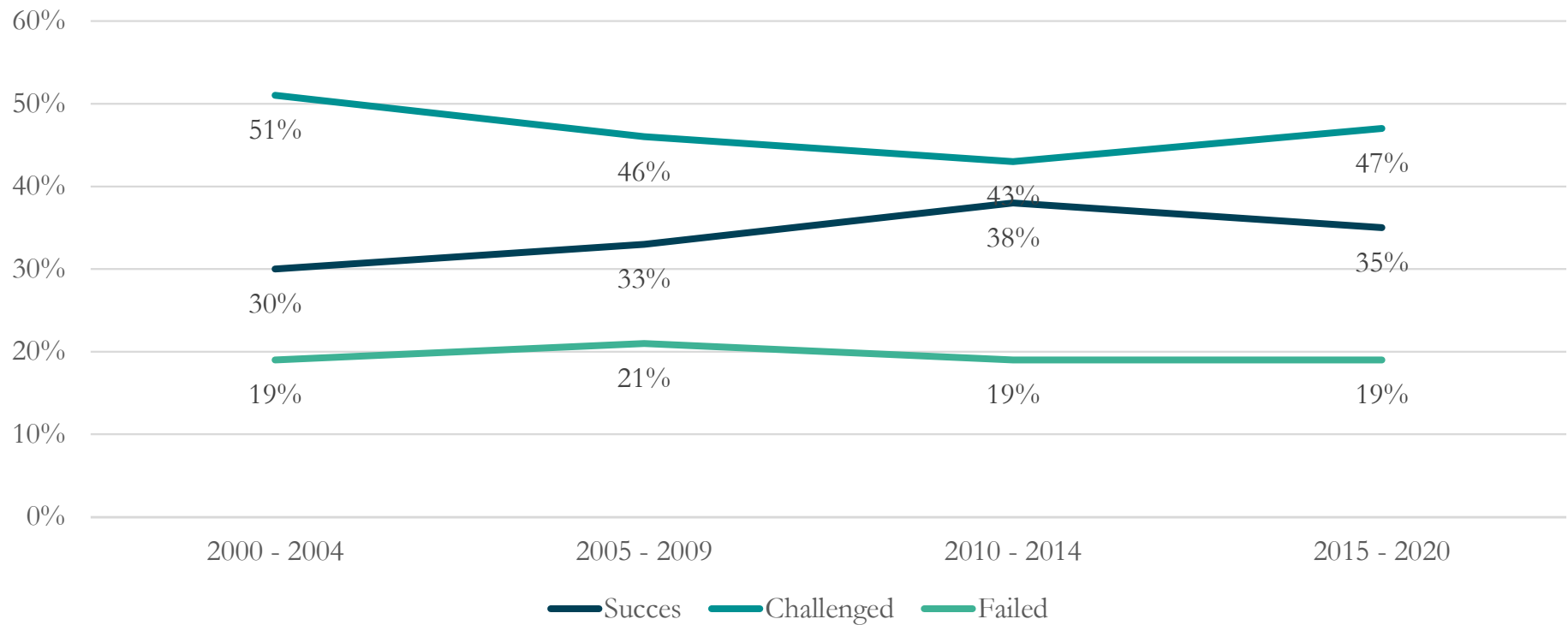| Planning | Clarification | Design | Build | Test | Release | Post-Release |

Realistic Expectations

The single most important task of a project:
setting realistic expectations.

Unrealistic expectations based on inaccurate estimates are the single largest cause of software failure.

Source: Futrell, Shafer and Shafer "Quality Software Projec Management", 2002

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The improvement is missing

	2000 - 2004	2005 - 2009	2010 - 2014	2015 - 2020
Challenged	51%	46%	43%	47%
Succes	30%	33%	38%	35%
Failed	19%	21%	19%	19%

— Succes — Challenged — Failed

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THE STANDISH GROUP

How to improve
My experience as a Critical Project Managers

- Improve Requirements gathering process
- Ensure common understanding
  - User – Technical – Test - Acceptance
- Improve Communication and Decision Making
- Ensure a strong team spirit between all stakeholders
- Support team on documentation and use of the right methods and documentation of agreements

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# Preferred Methods

Characteristics

- Gather information meaningful and useful
- Defined and simple to understand
- Supports innovation and creativity
- Relevant for multiple stakeholders
- Supports team building and understanding
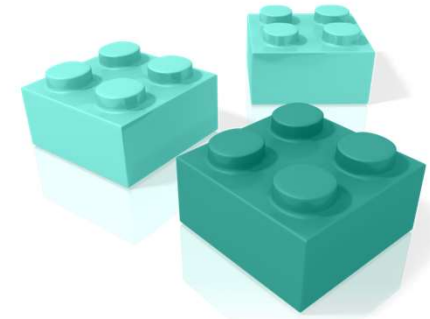- Increase the likelihood of setting the right expectations

The best Methods is the fun methods
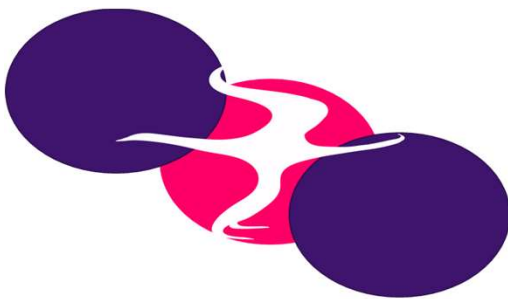
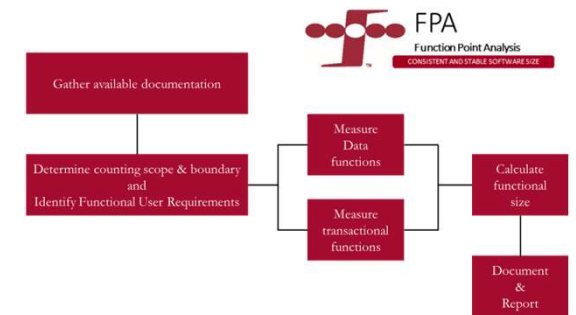IP by Green

Agenda

Communication
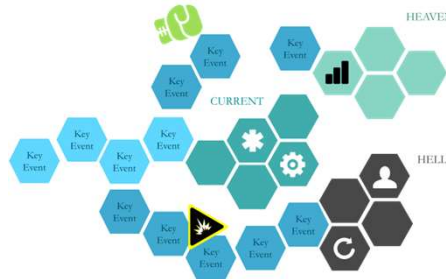&
Decision Making
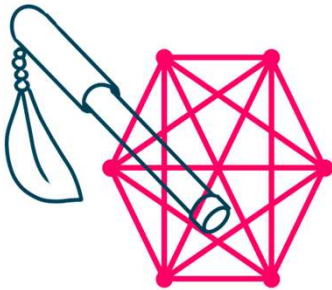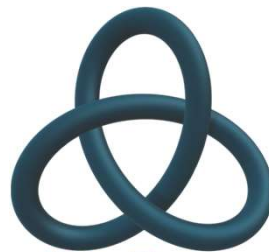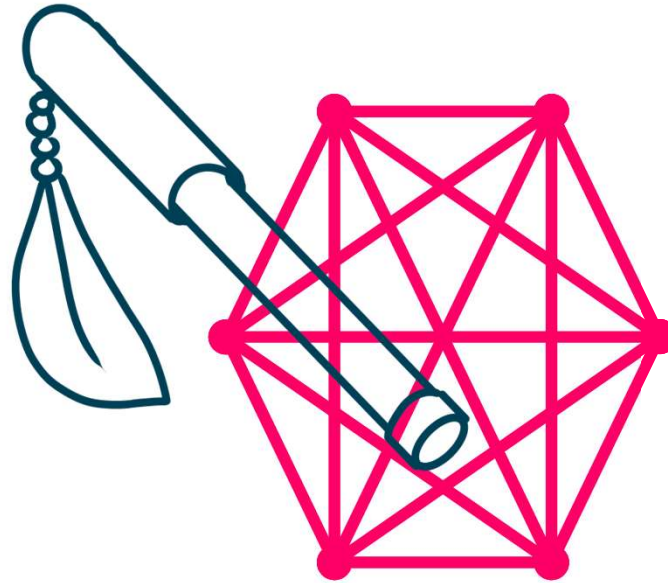
Equipment

Lego Serious Play

Cynefin and Dot Voting

Future Backwards

Function Point Analysis

Communication
&
Decision Making

Lines of Communication
Brooks Law $\dfrac{n^2 - n}{2}$
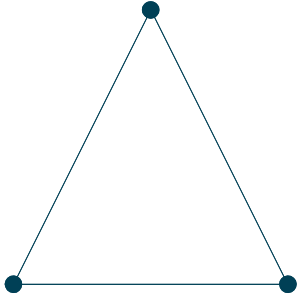
3 People, 3 lines
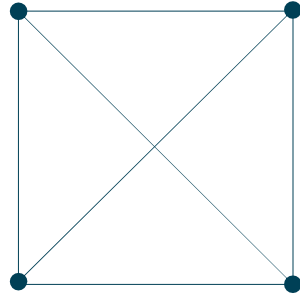
4 People, 6 lines
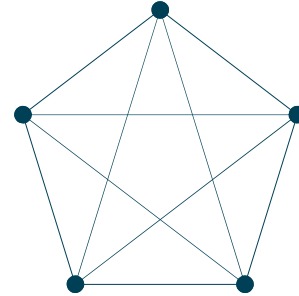
5 People, 10 lines
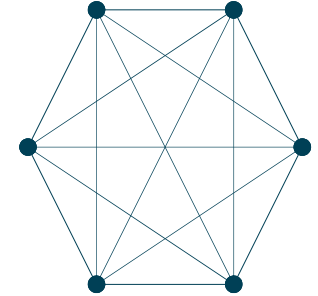
6 People, 15 lines
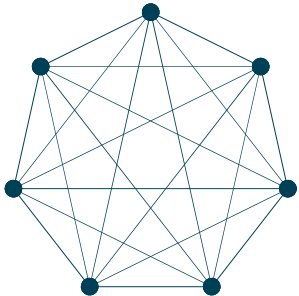
7 People, 21 lines
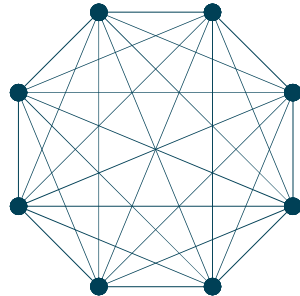
8 People, 28 lines
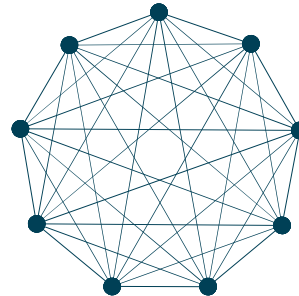
9 People, 36 lines
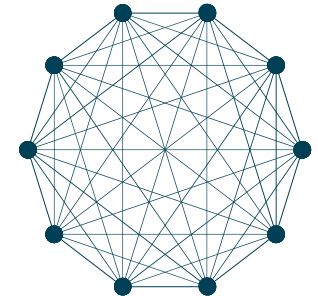
10 People, 45 lines
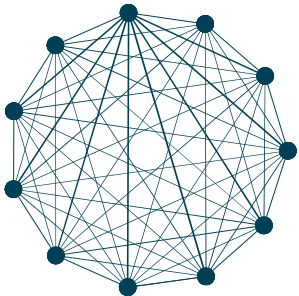
11 People, 55 lines
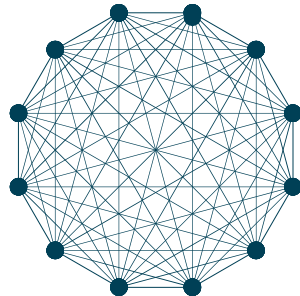
12 People, 66 lines
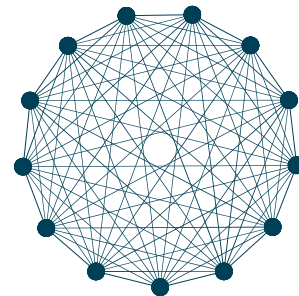
13 People, 78 lines

14 People, 91 lines

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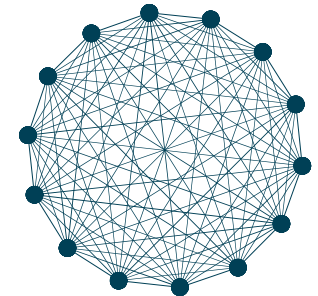
Opinions and Inputs

- The Perspective
- The Personality
- The Skills
- The Resource Type

All needs to be heard and taken into consideration

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Be Aware of the lines of communication

Optimal team size is 6-8!

So – create circles of teams within the team if more resources is required

In some organization this type of communicating is still required:
- Peer2Peer Decision
- Status Up&Down
- Escalation Down&Up
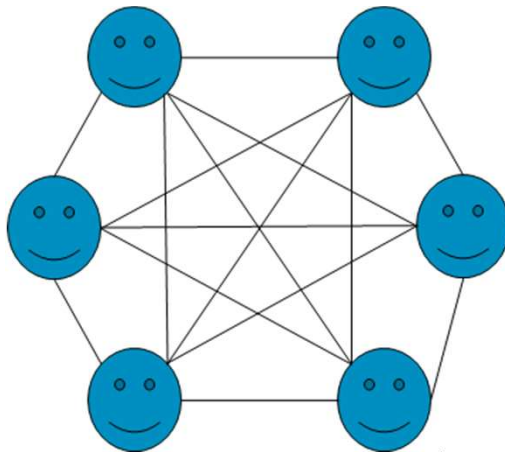
Good for team meetings and team thinking

Sometimes requires a facilitator

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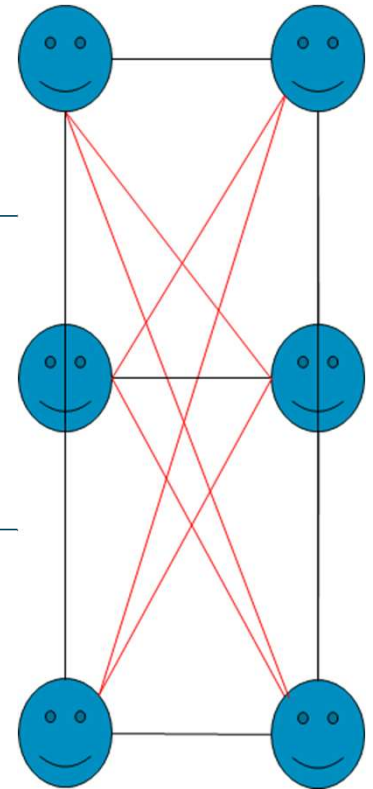
Recommendations

Consider the rules of the Indian Talking Stick

- Start the event with purpose and objectives
  - What is the individual expectations from the event?
  - The individual participants or shared objective of the meeting?

- End the event with a round table
  - Any inputs or concerns before we adjourn?

- Facilitator - is there to facilitate
  - Ensures all have time to talk
  - Ask individuals - What is your opinion?
  - Ensure all have had the opportunity to be heard!

"One of the **deepest needs** of the human soul **is to be understood**.

Once that need is met, the personal **focus can shift to interdependent problem solving**" (The 8th Habit, pp. 198)

Biggest Issue with Communication

Decision
Making

Consensus Decision Making

- Consensus decisions are the output of a process in which a team or group finds a solution that everyone can either actively support or live with.

- This type of decision making reinforces strong team behavioral norms by ensuring that everyone on the team has a seat at the table during the decision-making process.

- The team integrates all points of view – both majority and minority – into the deliberation process

Common Goal

Commitment to Reach a
Consensus

Trust

Active Participation

Good Facilitation

Consensus

Decision Making Process

Introduce the Decision to be Made

Explore Issues and Look for Ideas

Look for Emerging Proposals

Discuss, Clarify and Amend the Proposal

Test for Agreement

Refine to Remove Blocks and Reservations

Make the Decision

Implement

Pause or Escalate

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DAIR

The four most important things to document

DAIR

D

Decision

Document the agreements made – whom, when, why and what. Sometimes used as a formal process – such as delay notification, requirement documentation etc.

A

Assumptions/Actions

Track and Monitor.
A would usually stand for Assumptions, but I also use it for Actions in some cases. The documentation for assumption and actions are almost the same.

I

Issues

Solve and Document issues even if they are not issues from a technical perspective.

R

Risk

Track and Monitor all risk regularly at leadership as well as team meetings. Try to put monetary or time impact on risk. Will a risk impact – budget, progress, quality etc…

E

Escalation

An escalation is when something cannot be solved that is urgent or impacting the ability to perform. Escalation is a highlight that support is required for removal of obstacles. **Tracked as Action plan STATUS CHANGE**

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DAIR Log

Decisions

Risks

Issues

DAIR LOG

- One Tool or Spreadsheet captures all

- Used and monitored by a dedicated person

- Iterative documentation

- Meeting, Agreement, Point of control

Team Tools

Asset storage

- Document repository
- Configuration Management

Ad-hoc snapshot Powerpoint Etc

Meetings

- Status reporting
- Escalation

Test & Defect Management

- Scope Management
- Project Management
- Test & Defect Repository
- Contract Evaluation

Customer portal

- Service Order Management
- ITIL related
- Incident and Problem Management

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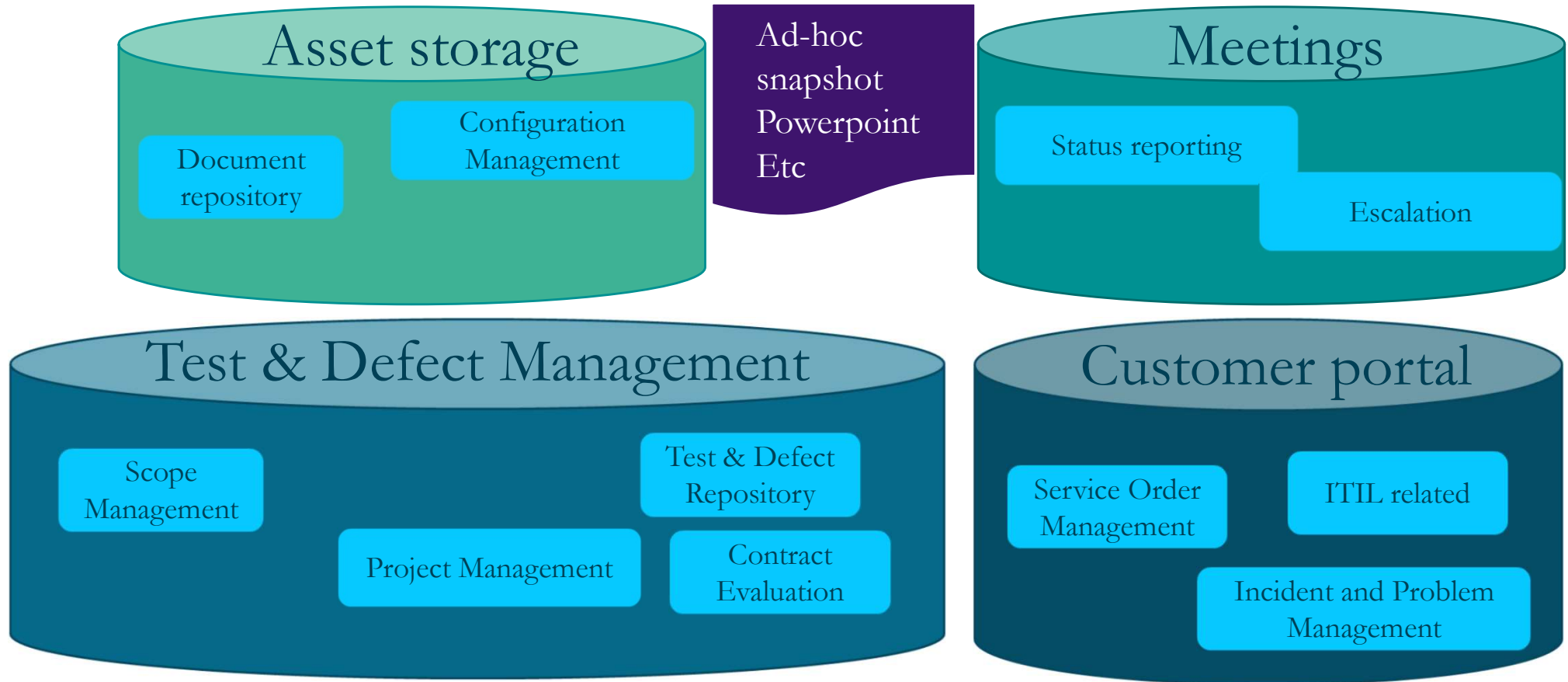
DAIR process
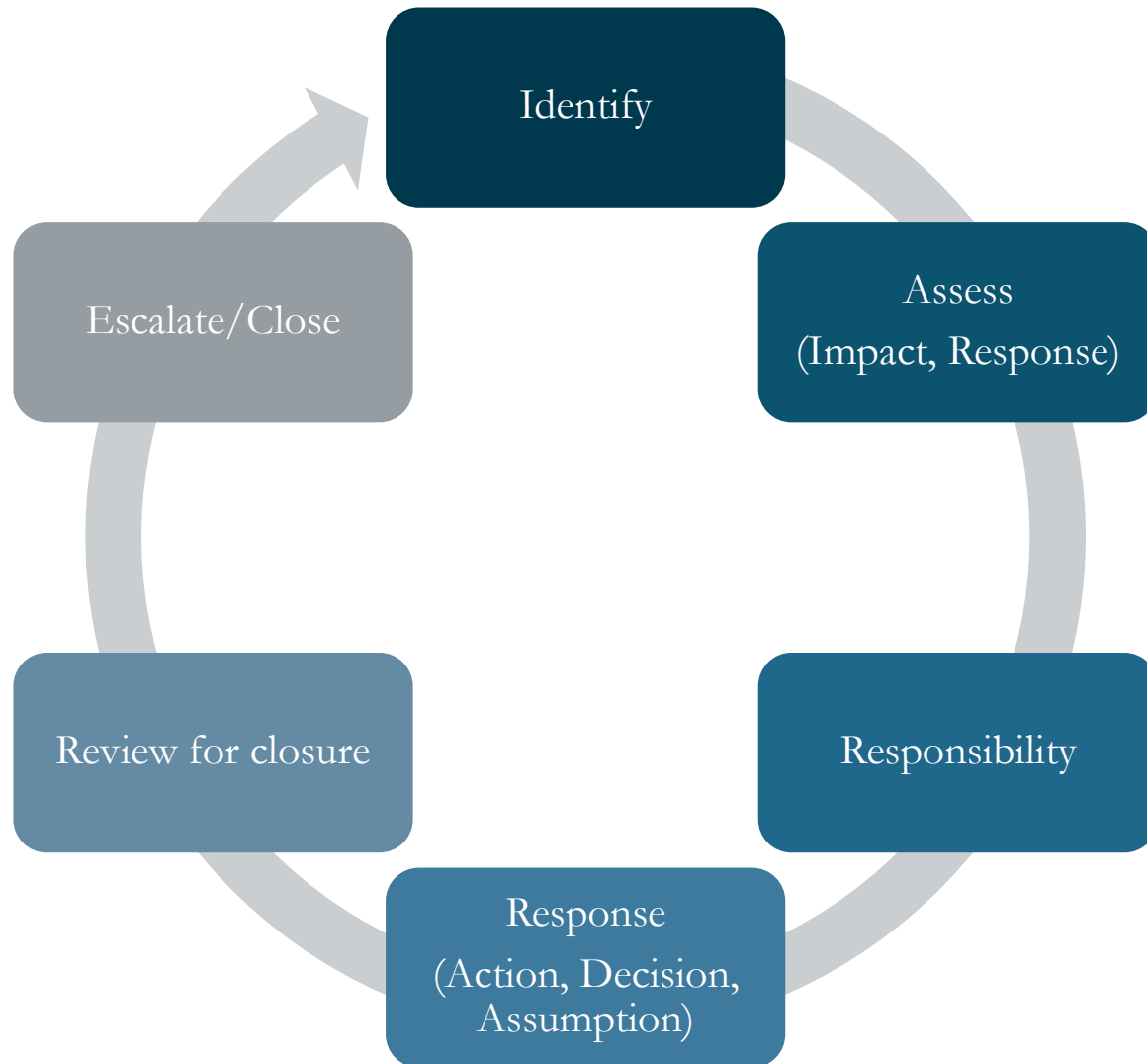
DAIR & Decision-making – Successful Communication

Left cycle:
- Identify
- Assess (Impact, Response)
- Responsibility
- Response (Action, Decision, Assumption)
- Review for closure
- Escalate/Close

Goes Hand In Hand

Right cycle:
- Introduce the Decision to be Made
- Explore Issues and Look for Ideas
- Look for Emerging Proposals
- Discuss, Clarify and Amend the Proposal
- Test for Agreement
- Refine to Remove Blocks and Reservations
- Make the Decision
- Implementation and Change Management

Pause or Escalate

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Equipment

Yellow Sticky Note

Red Sticky Note

Blue Sticky Note

Green Sticky Note

Sticky Note

Light Blue Sticky Note

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The brain

Your brain has a right and a left side

- Using color, symbols and drawings – makes you use the right side of your brain

- Using your hands can be yoga for the brain (think knitting)

- Card playing is one of the recommended memory enhancement exercise

The result is synergy
– your memory can cope with twice as much information
- Your concentration increases

Equipment

- Choose the cards that makes sense for you

- Combine different card sets

- Create your own cards

- Use Lego Blocks

- Use Sticky notes in different shapes - Stars and Hexogen

- Use Whiteboards, Window and Flip overs

- Use colors and different sizes

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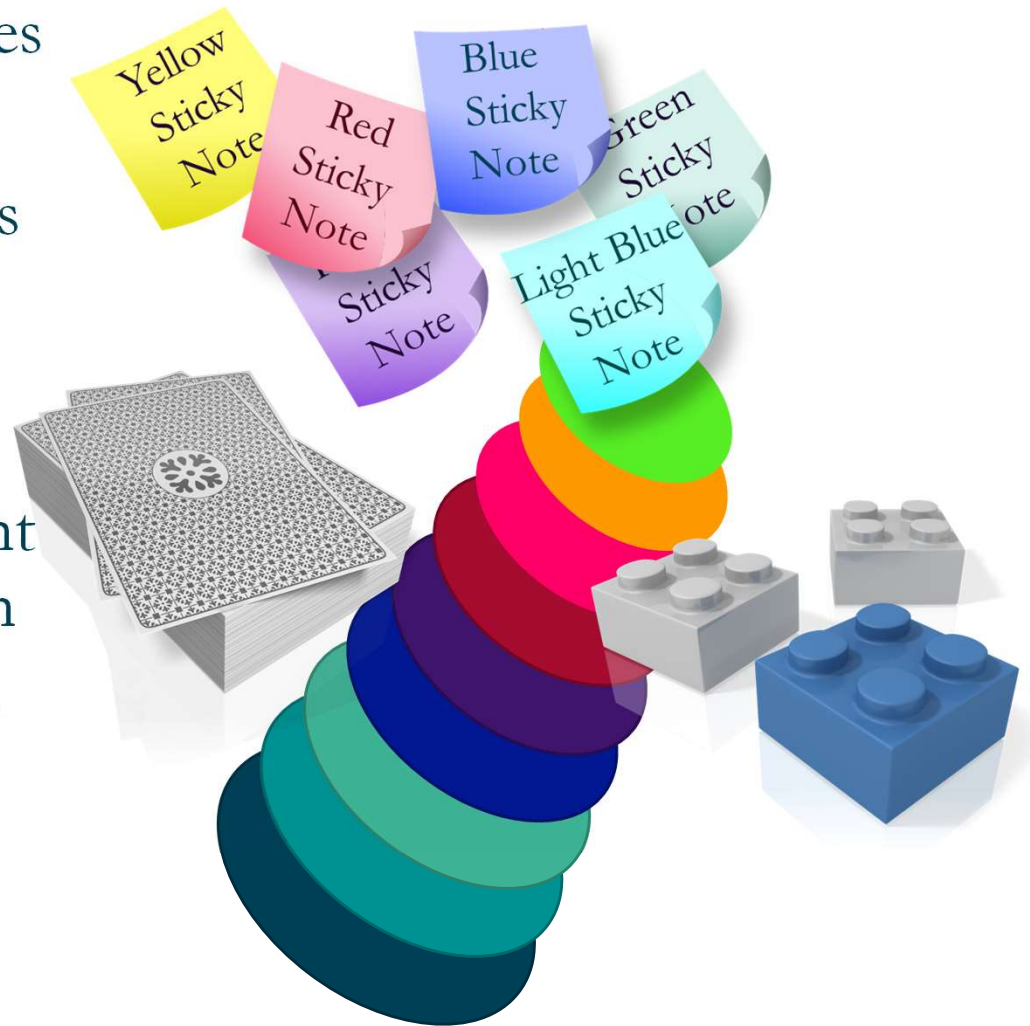
Pens

- Have Pens that work on
  - Window
  - Paper
  - Whiteboards
- Different sizes
- Different Colors
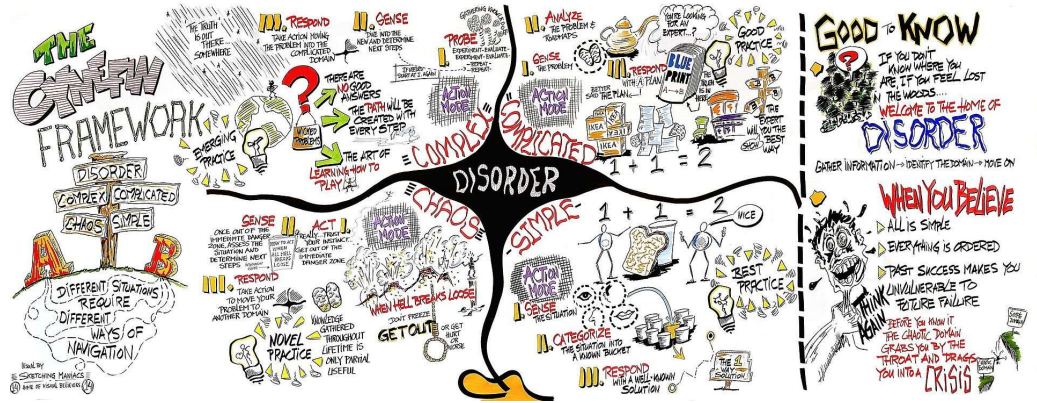
Get inspiration from Mind Mapping approach

Combine Colors, drawings, symbols, etc

Sticky Notes

- Used for all and nothing
- Sometimes colors means something – sometimes they don't

But all get excited when they have the opportunity to write something down that other will read!

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Card Decks

www.agileleanhouse.com/en/agilecards

AgileLeanHouse

House A/S 20

Planning Poker Cards

- Fibonacci Card
- Perhaps a couple of extra

T-shirt Size

- Used as high level estimating technique
- You can link it to Effort, Size, Cost, Price what ever you like

Understood by all – quickly

Consistent only if "Rules of thumb" is applied

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Confidence Assessment

Daniel Kahneman focus on confidence

- Use when you can see the confidence might not be high
- Use to evaluate confidence in decisions
- Use to evaluate confidence in estimates

"When lots of people are trying to pursue opportunities against the odds, it's not very good for most of them, most of them will fail,"

Daniel Kahneman

Kano Estimation

The Kano model is a theory for product development and customer satisfaction developed in the 1980s by Professor Noriaki Kano

The 5 Card Category

- Too Small: Like a single brick of lego, that only have value as part of the set.

- Too Big: Must be broken down, decomposed before the user can assess the value.

- Reverse: Annoying for the users and should of course not be implemented.

- Exciter: This feature will make the users say "Wow, can you do that as well?"

- Must Have: The user will not accept the product without this feature or quality

When Exciter or Must have is used:

Consider using Quantify Business Value with Planning Poker Card.
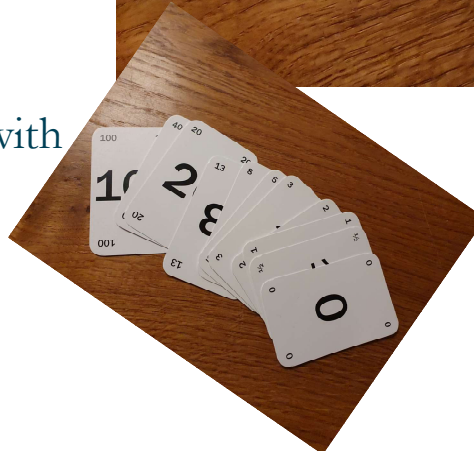
Cynefin Cards

- Short description card
  - Helps to remember when new to the game

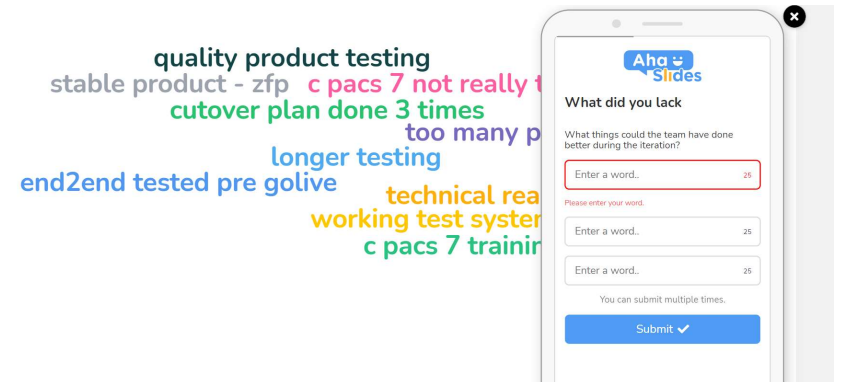- Show the individual perspective
  - Used for decision making and next step discussions

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And WHAT if we are Virtual

- Video Conference

- Screen Sharing

- Tools:
  - MindMapping
  - WhiteBoards
  - Interactive tools etc
  - Backlog/Kanban (Trello like)
  - Chat groups
  - Pen drawing

Try it out: https://ahaslides.com/IPBYGREEN1

quality product testing
stable product - zfp   c pacs 7 not really t
cutover plan done 3 times
too many p
longer testing
end2end tested pre golive
technical rea
working test syster
c pacs 7 trainir

Aha Slides

What did you lack

What things could the team have done
better during the iteration?

Enter a word..   25

Please enter your word.

Enter a word..   25

Enter a word..   25

You can submit multiple times.

Submit ✔

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Lego Serious Play

Lego Serious Play

My Thoughts

- Adults playing Lego with a purpose

- Great team building exercise

- Great motivator

- Decision making and listen technique

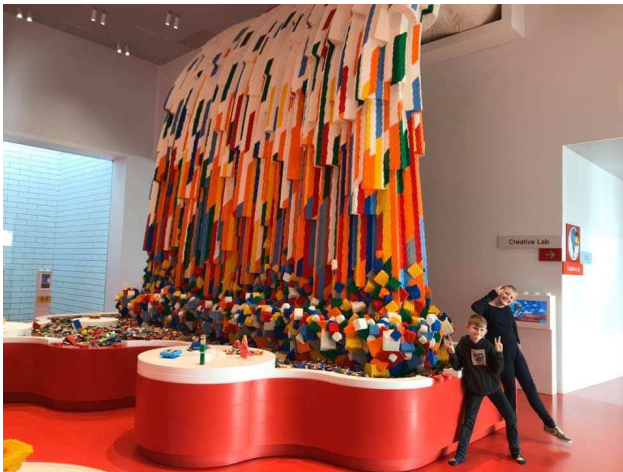## LEGO® Serious Play

- Enhance innovation and business performance

- Insight and awareness into commitment and shared goals

www.lego.com/en-us/seriousplay

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Serious Play Process
The Steps in Serious Play

The Challenge

- Facilitator formulate Challenge
- Purpose to open reflection and dialog
  Challenge to serve the purpose of the event

The Building

- Assign meaning and narrative to their model
  A reflective process using metaphors
  Access to the knowledge and experience

The Sharing

- Share stories and assigned meanings
  Everybody shares and listen
  Shared Understanding and Goals
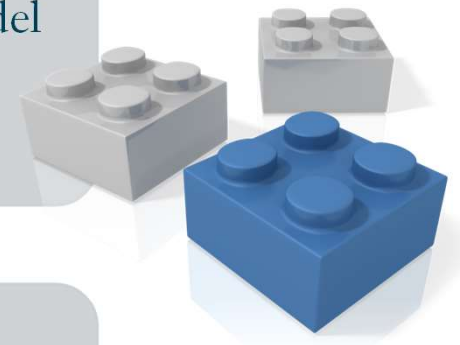
Lego "Serious" Play - Example
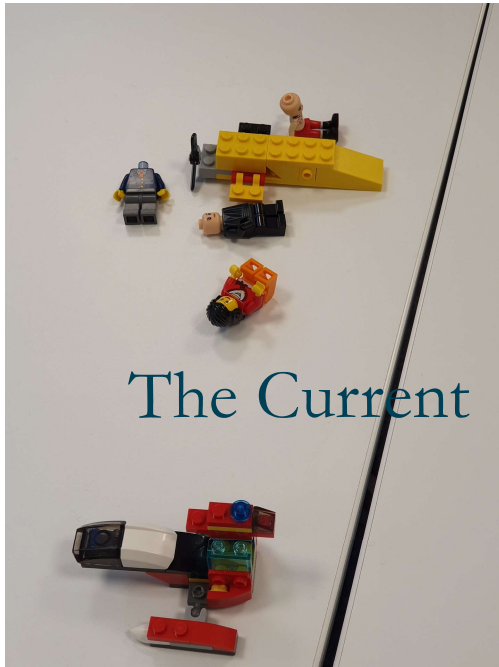
Shared understanding
- Focus
- Priorities
- Plans and Dreams

Re-**Energize**

The Current

The future

Current Example

A Team that needed to agree and commit between requirement and ability to build

The Challenge	• Where are we today
The Building	• In teams of 2-3 with a mix between Users and Developers
The Sharing	• An open discussion over a cup of Coffee

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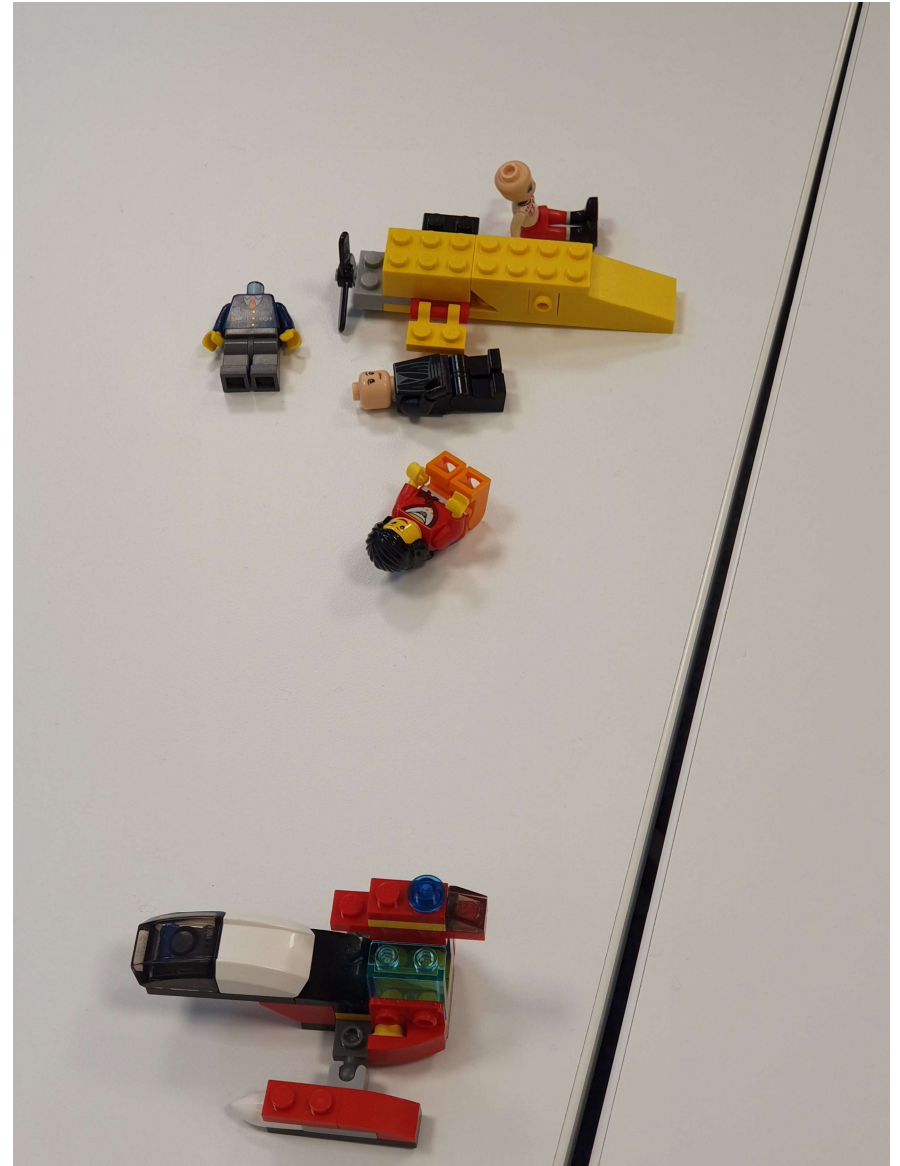
Shared Goals

A Team that needed to find a shared goal and objective

The Challenge
- Where do we want to be in 6 months

The Building
- In teams of 2-3 with a mix between Users and Developers

The Sharing
- Input to goals and objectives

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Future Backwards

HEAVEN

Key Event

Key Event

CURRENT

Key Event

Key Event

Key Event

Key Event

HELL

Key Event

Developed by David Snowden

Key Event

Key Event

Key Event

Key Event

Key Event

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The Future Backwards

Direct participants to understand

Enable participants to guide **events**

Evaluate a **complex problem** as a team

Insight into the different factors

Goals, vision and risk to reach the final desired stage

Determine next steps towards a desired outcome

Shared team **understanding**

Shared and **agreed view**

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The Future Backwards - Guidelines

In teams of maximum 4 – 5 participants describe:
- Current State of the problem
- Heaven for the problem
- Hell for the problem

You have 3 times 7 minutes. Timing might change depending on the problem

HEAVEN

CURRENT STATE

HELL

Key Events
The Lucky Punch or the Black Accident

Key Events

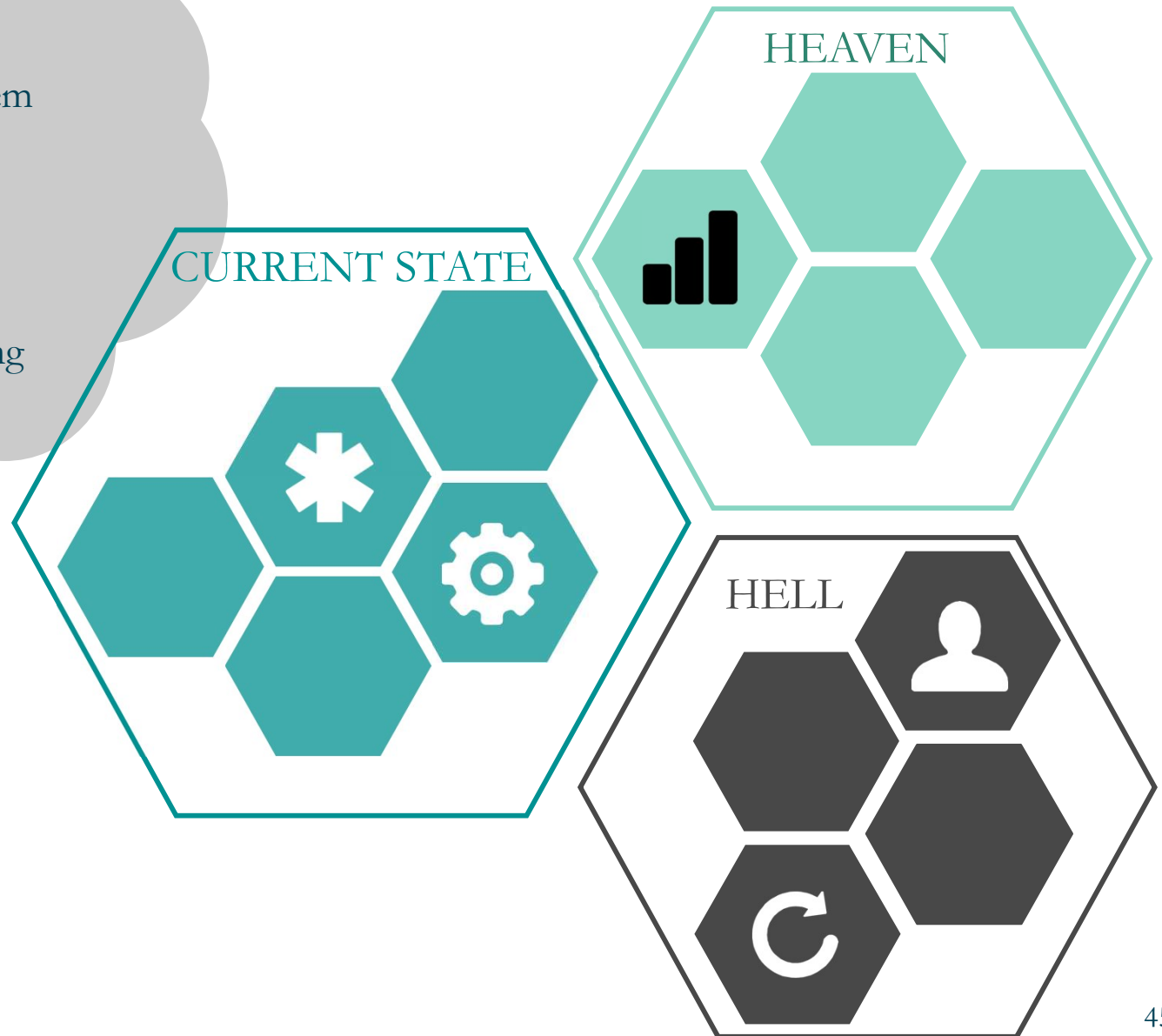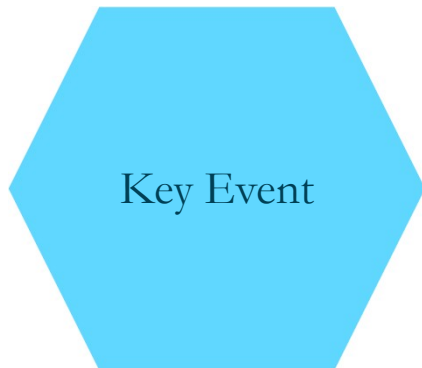Events that are part of the collective memory of the organization and may influence decision making

Lucky Punch

The event or activity that will increase the likelihood of reaching heaven

Black Accident

The event or activity that will take us straight to Hell

Key Event

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Visual Perspectives

Describe the Key Event leading to:

Current State of project Heaven and Hell

Let the Key event/path to Hell and Heaven start before Current State

HEAVEN

CURRENT

HELL

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

Key Event

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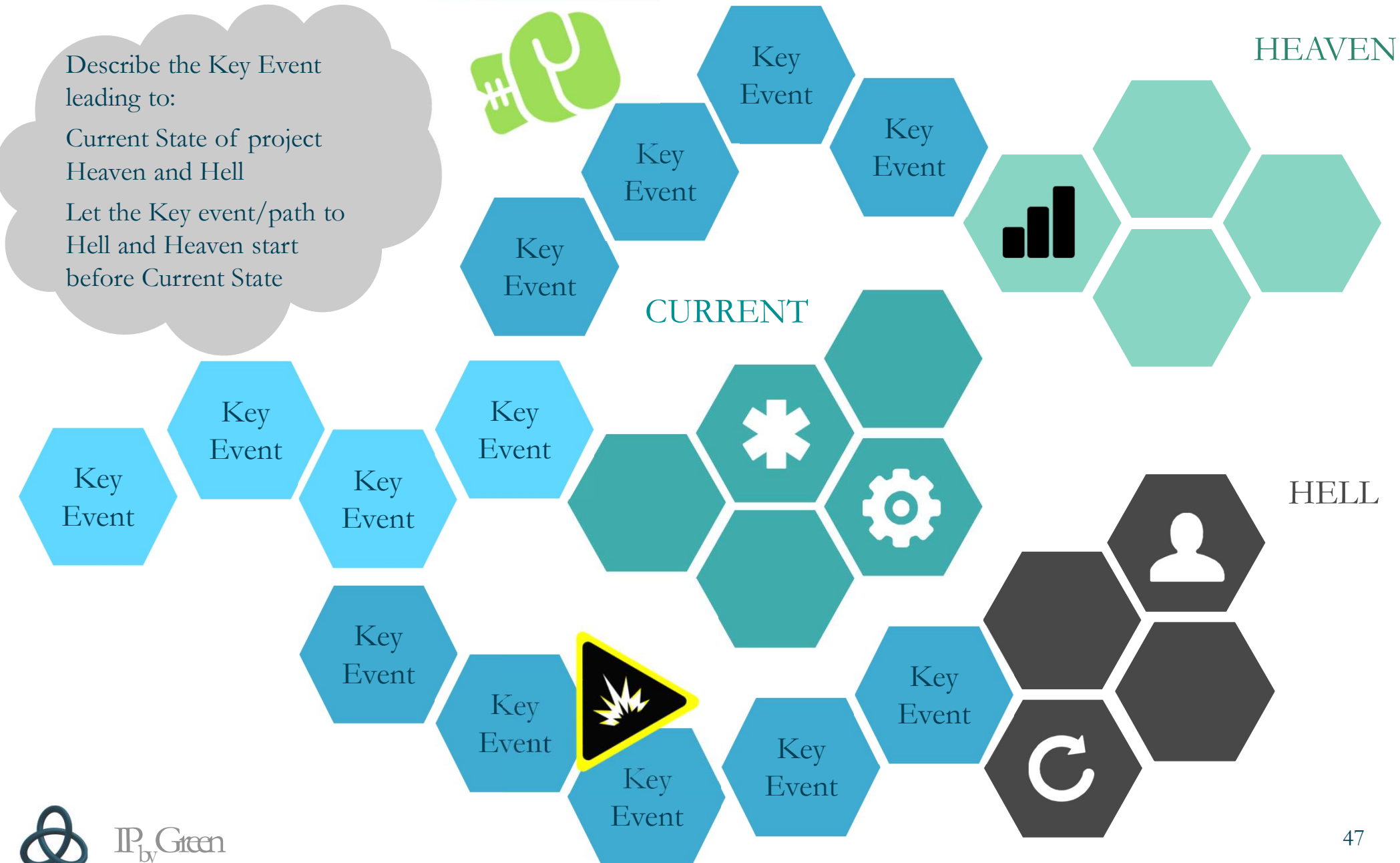
Future Backwards Examples

- Remember to break down the problem to a reasonable "Size"

- If the problem is too "big" it becomes a theoretical solution

- Remember to ensure all has their "talking" time and nobody is dominating or influencing the inputs

- Option to have lucky punch and black accident as a breakout of only a few key resources

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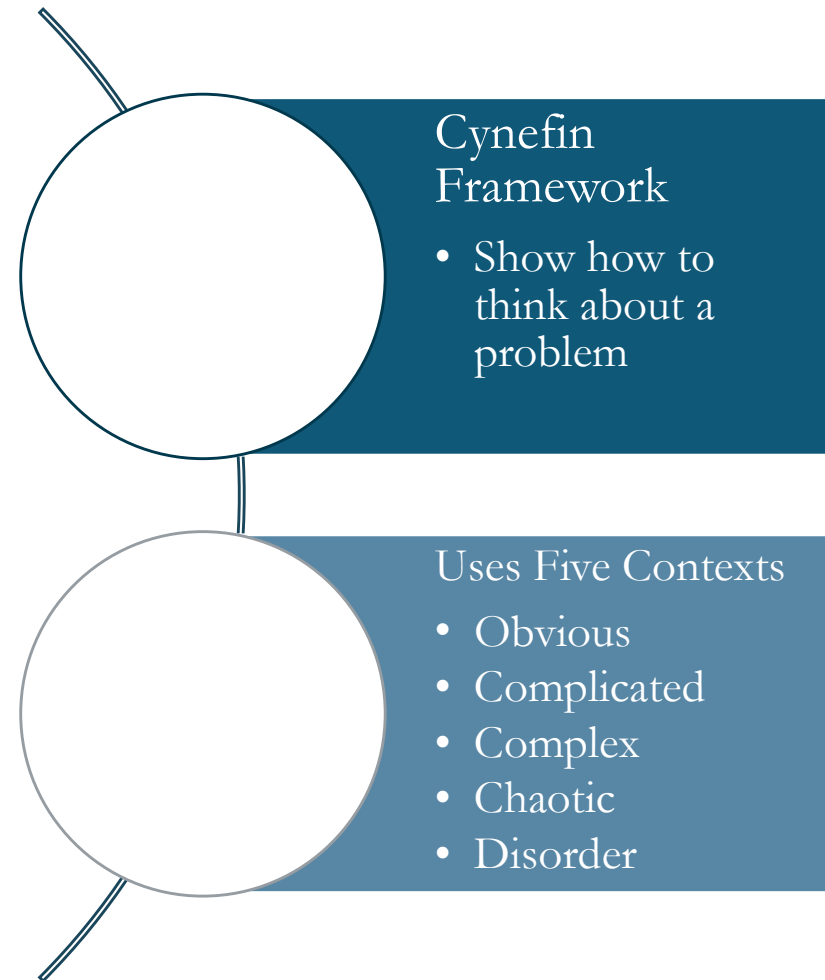# Cynefin and Dot Voting
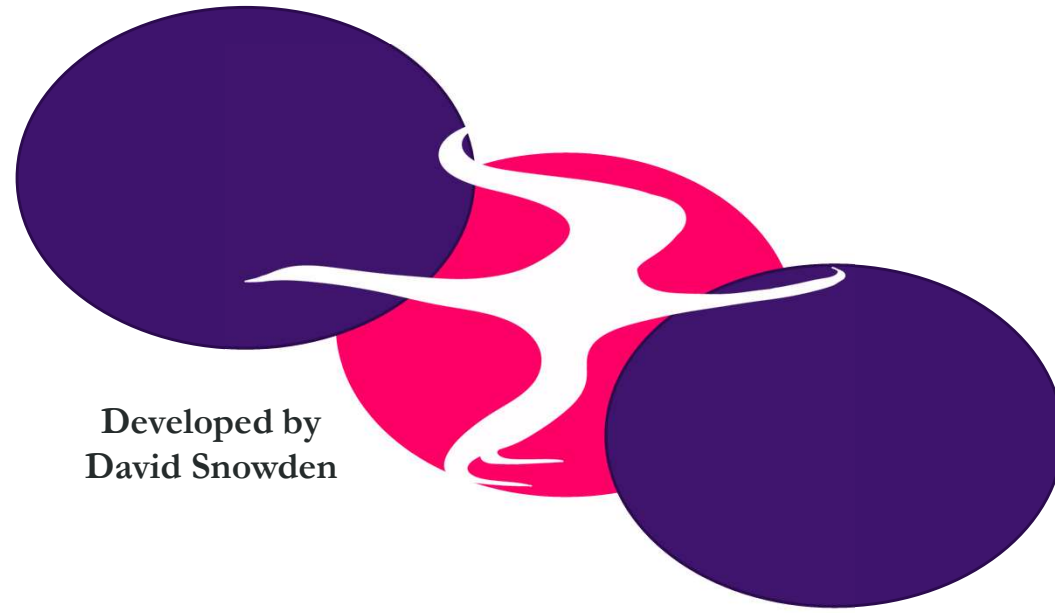
Developed by
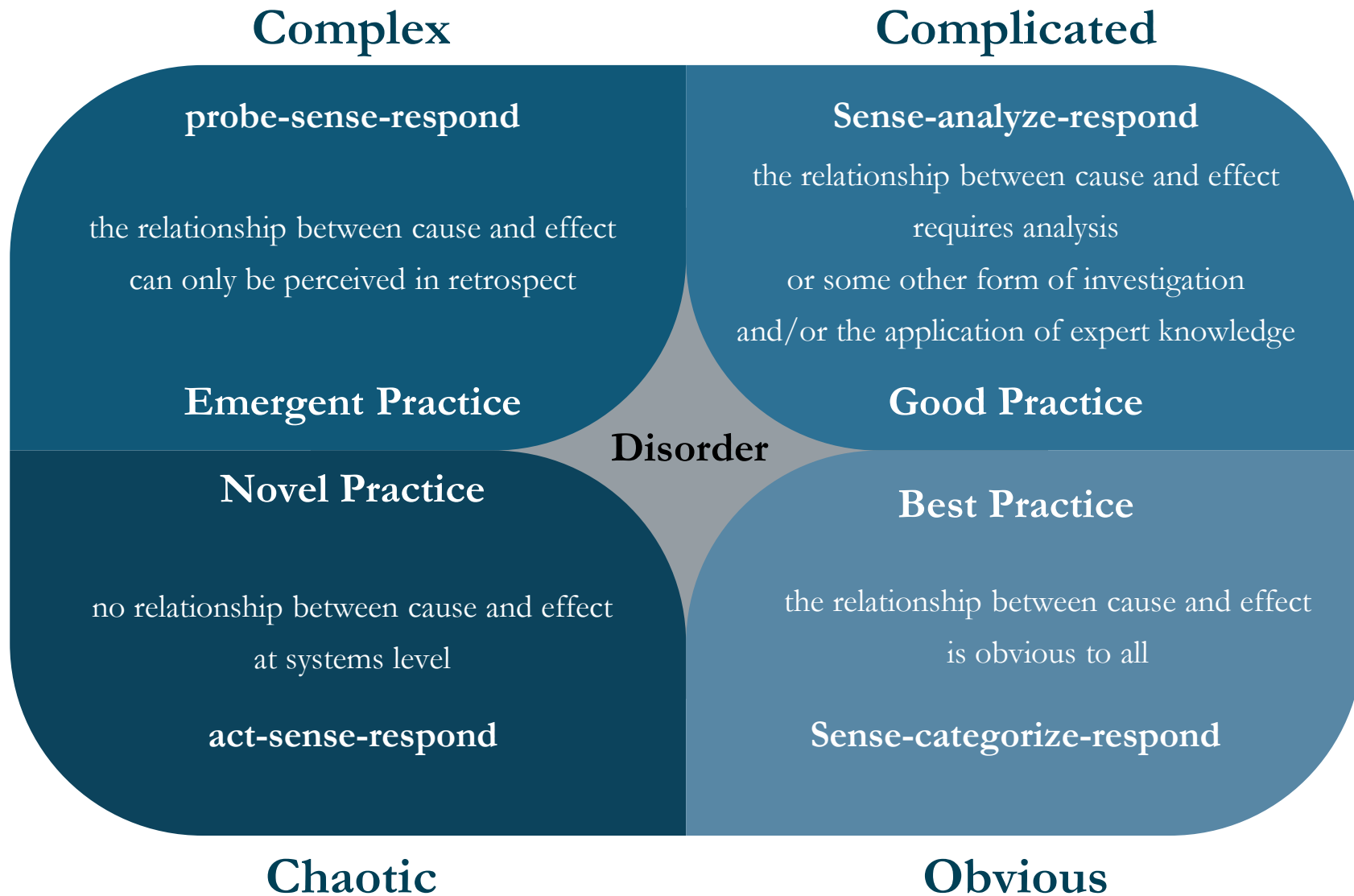David Snowden

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Cynefin

- The Cynefin framework is a conceptual framework used to aid decision-making. Created in 1999 by Dave Snowden, it has been described as a "sense-making device".

- Cynefin pronouns **ki-nev-in** for "cynefin", as "f" in Welsh is pronounced "v"

- Cynefin is a Welsh word, which as a noun literally means "haunt, usual abode" or "habitat", but it is used as "place of your multiple belongings", that can be cultural, geographical, religious, tribal etc..

- Cynefin offers **five** decision-making contexts or "domains" – obvious, complicated, complex, chaotic, and disorder - that help managers to identify how they perceive situations and make sense of their own and other people's behavior.

Cynefin Framework

- Show how to think about a problem

Uses Five Contexts
- Obvious
- Complicated
- Complex
- Chaotic
- Disorder

Cynefin Framework

Complex

probe-sense-respond

the relationship between cause and effect
can only be perceived in retrospect

Emergent Practice

Complicated

Sense-analyze-respond

the relationship between cause and effect
requires analysis
or some other form of investigation
and/or the application of expert knowledge

Good Practice

Disorder

Novel Practice

no relationship between cause and effect
at systems level

act-sense-respond

Best Practice

the relationship between cause and effect
is obvious to all

Sense-categorize-respond

Chaotic

Obvious

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Cynefin In Practice

Complex
Probe-Sense-Respond

Don't try to find all the stories.
Find one or two proving some value and teaching you something about the problem and solution,
build those and use what you learn to find the rest.

Emergent Practice

Complicated
Sense-Analyze-Respond

Find all the stories and
do the most valuable and/or
most risky ones first.

Good Practice

Disorder
Figure out which domain you're in before splitting so you don't take the wrong approach

Novel Practice

Put out the fire!
Splitting stories probably isn't important right now.

Act-Sense-Respond
Chaotic

Best Practice

Just build it. If it's too big find all the stories and do the most valuable ones first.

Sense-Categorize-Respond
Simple

Dot Voting

A democratic process input

- As a way to priorities
- As a measure of interest
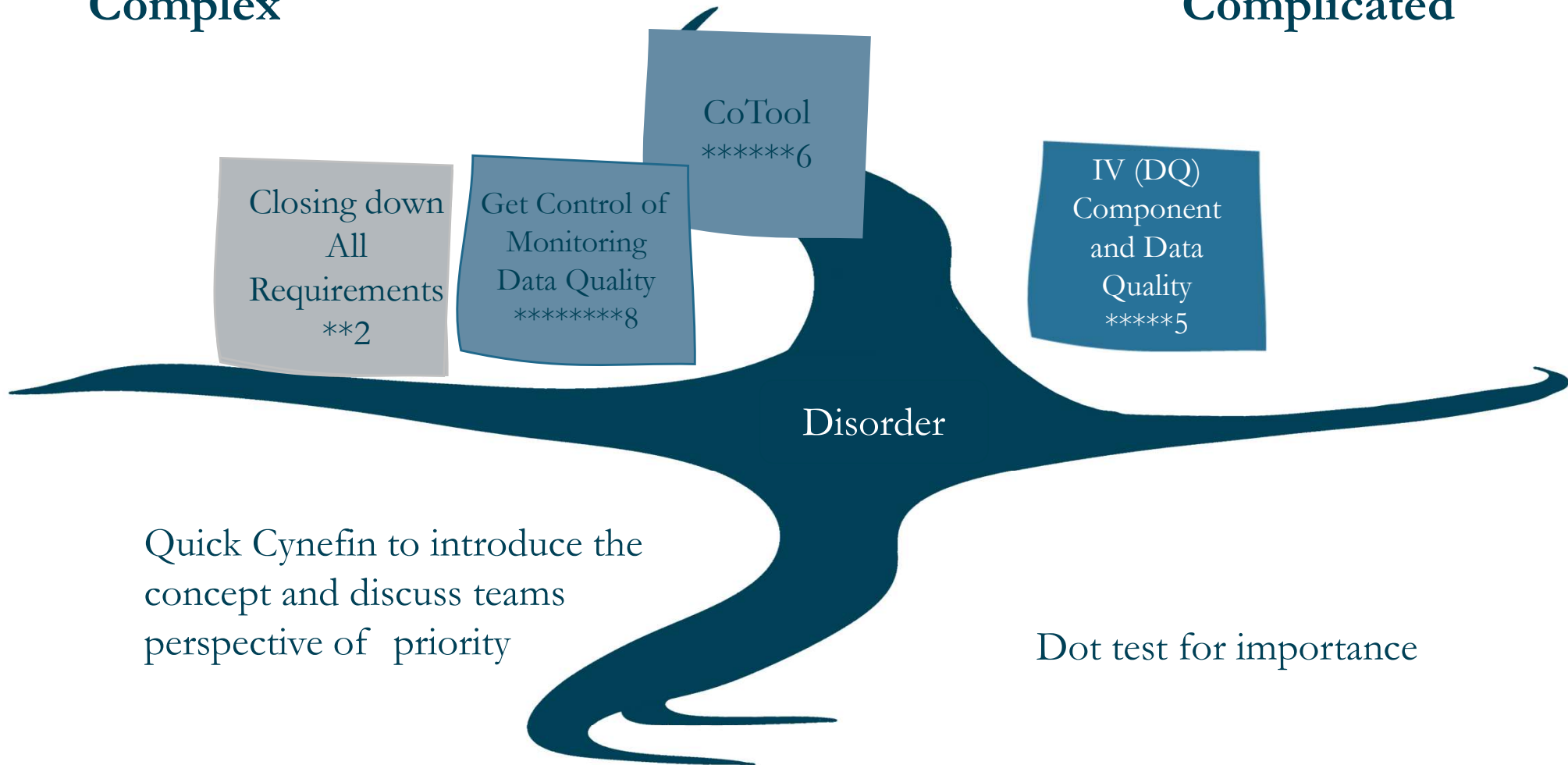- As an input from all participants

| Closing down All Requirements **2 | Get Control of Monitoring Data Quality ********8 |

Simple – Dots, stickers, pencils – it does matter

Remember to formalize a statement of what is voted about
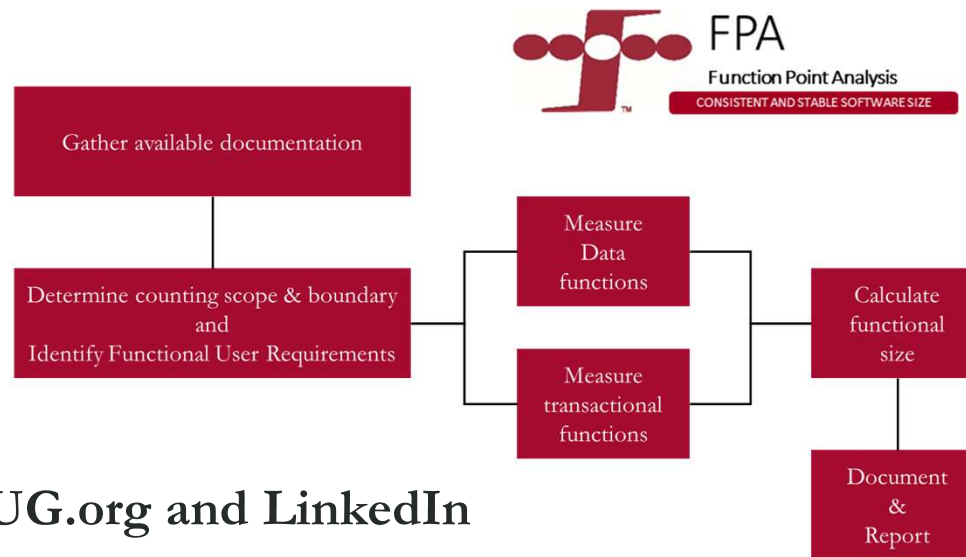
Cynefin – Example

Complex   **Complicated**

CoTool
******6

Closing down
All
Requirements
**2

Get Control of
Monitoring
Data Quality
********8

IV (DQ)
Component
and Data
Quality
*****5

Disorder

Quick Cynefin to introduce the
concept and discuss teams
perspective of priority

Dot test for importance

Chaotic   **Simple**

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Function Point Analysis

Gather available documentation

Determine counting scope & boundary
and
Identify Functional User Requirements

Measure Data functions

Measure transactional functions

Calculate functional size

Document & Report

FPA
Function Point Analysis
CONSISTENT AND STABLE SOFTWARE SIZE

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Function Point Analysis – the Method

FPA
Function Point Analysis
CONSISTENT AND STABLE SOFTWARE SIZE

A Certified FP Specialist is an expert in bridging between User, Technical and Planning needs

- Business Process & Software Requirements Breakdown
- Scope Control from a Business perspective
- Scope analysis and control from a user's perspective
- Scope of work for Teams and Projects
- List of deliverables
- List of transactions to be tested
- Measure of impact
- Key Performance normalization factor
- The Functional Size Measure of a project or software component

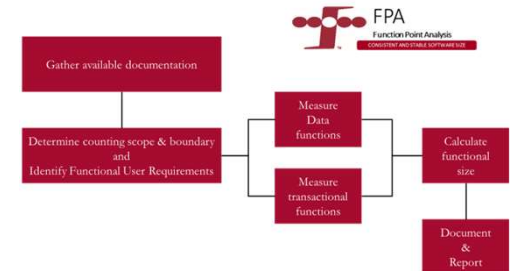**The Process for scope illumination, control and measurement**

Estimation and Monitoring

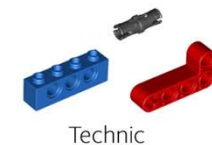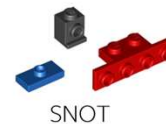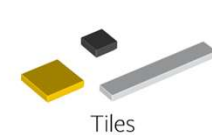What does it take to build a LEGO construction?

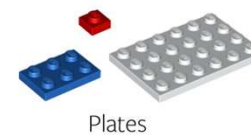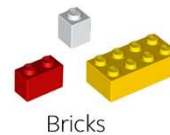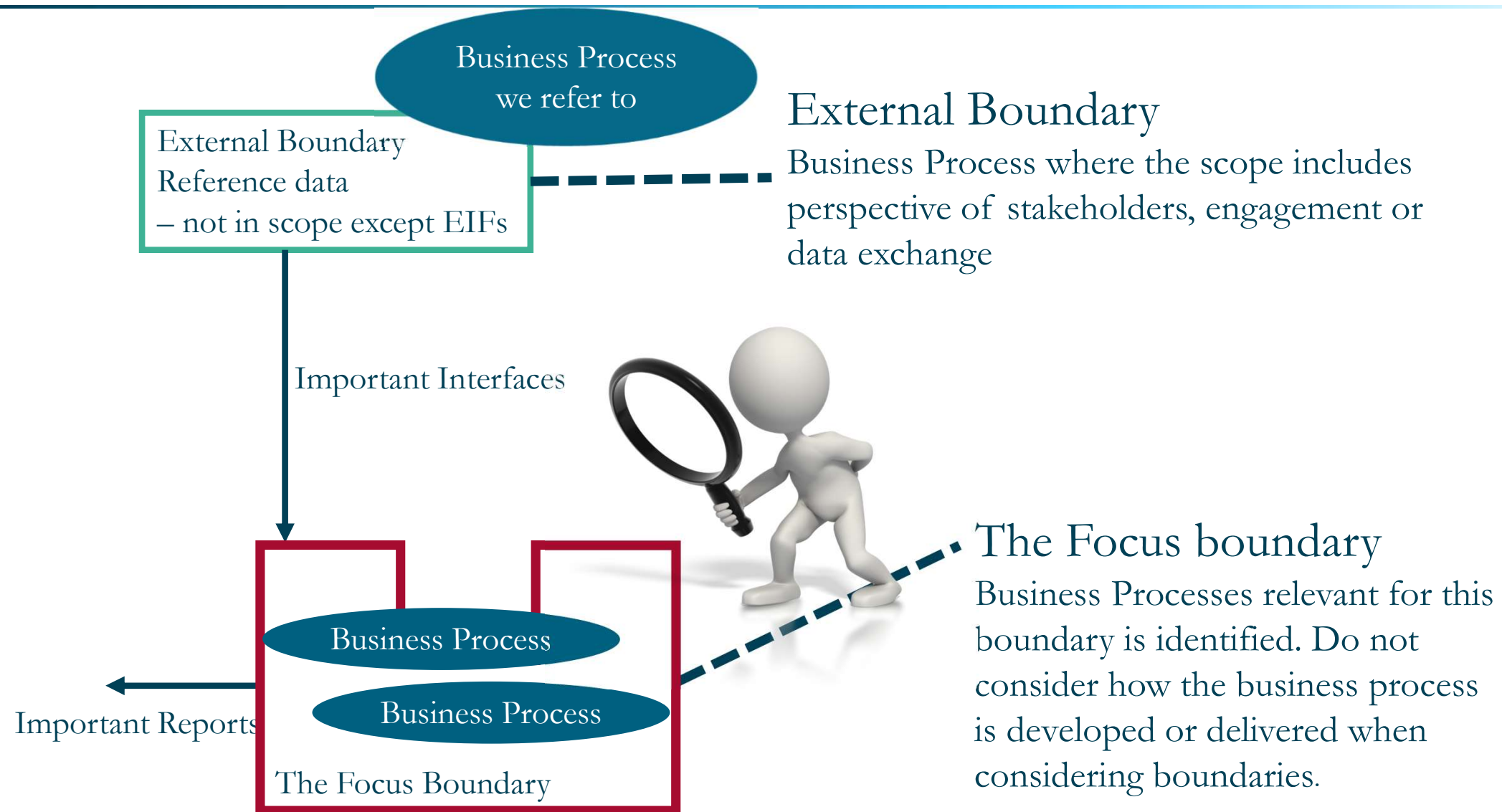Simple construction   Complex construction

…it certainly depends on the requirements

Boundaries from a business perspective

Business Process we refer to

External Boundary
Reference data
– not in scope except EIFs

External Boundary

Business Process where the scope includes perspective of stakeholders, engagement or data exchange

Important Interfaces

Important Reports

Business Process

Business Process

The Focus Boundary

The Focus boundary

Business Processes relevant for this boundary is identified. Do not consider how the business process is developed or delivered when considering boundaries.

Example - Technical

Example – Functional & Business Process

The Flow on a Workshop

Function Point

Mind Map & Diagram

Lego Current

Future Current

Plan, Estimates and expectations

Cynefin

Future Backwards

Lego Future
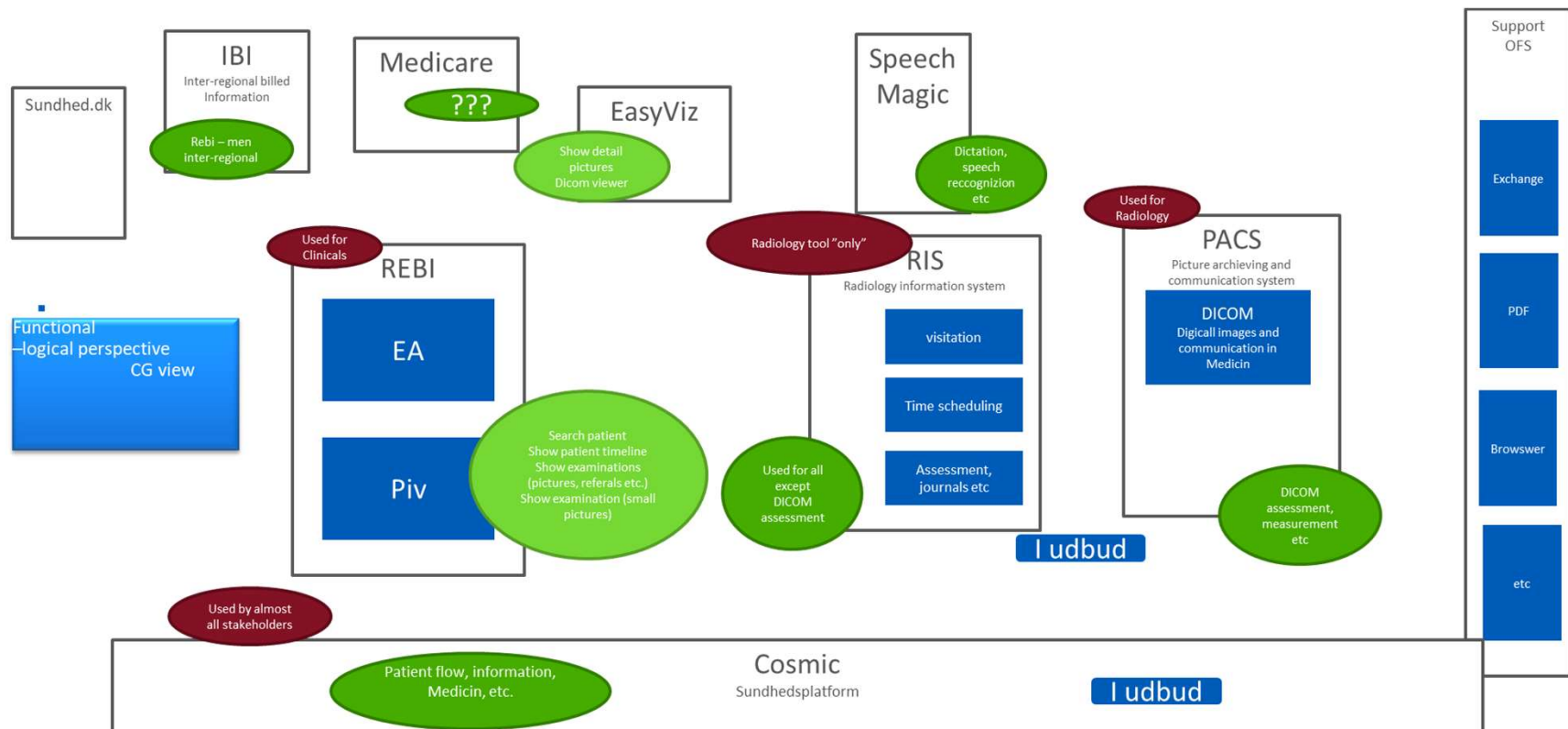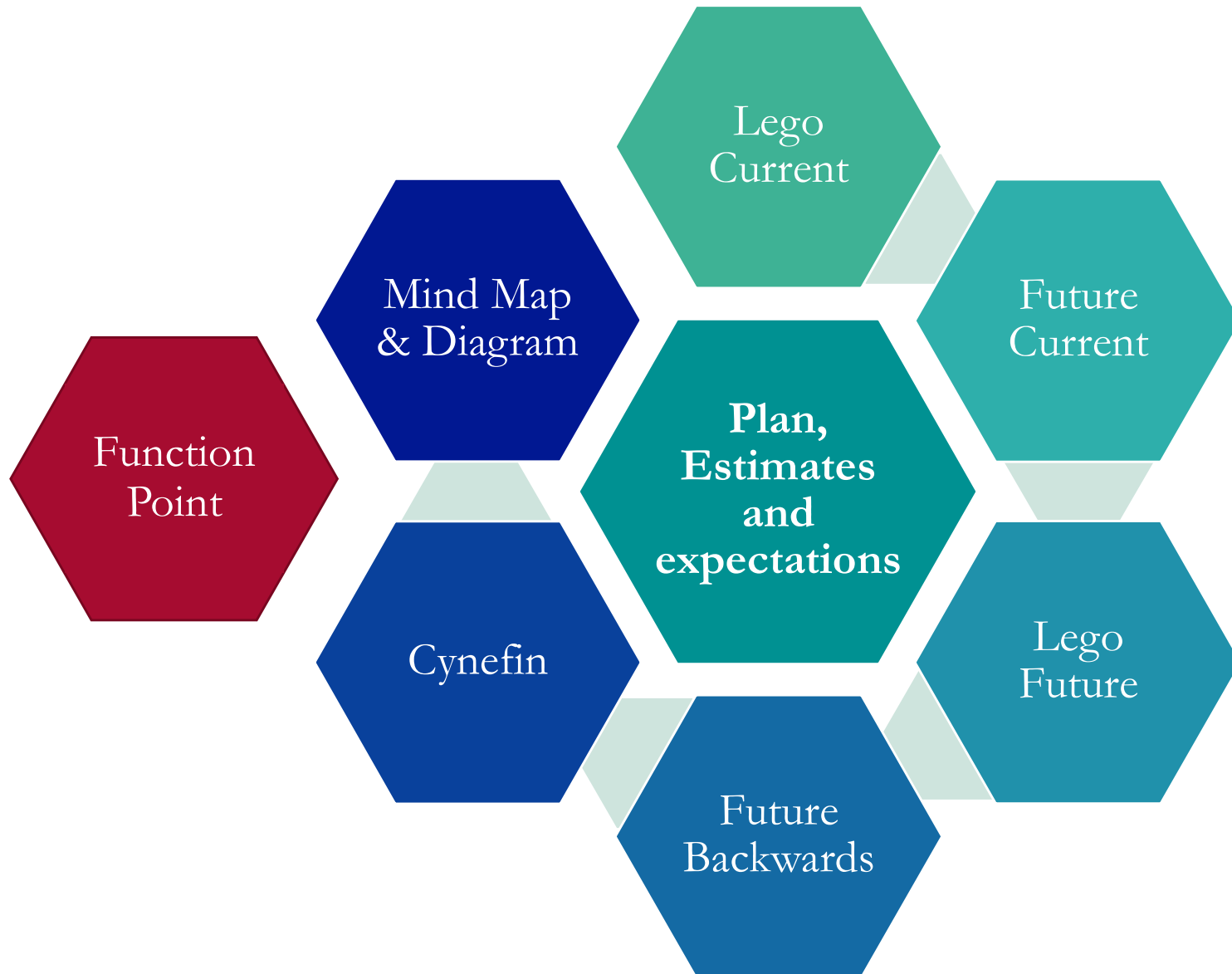
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Final Statement: My word of wisdom

Try to find methods that increase the communication and expectation setting

Be creative and fun – it creates an open environment

Agility is about working fast and flexible – Sometimes this means you need to be "traditional"

The success is in the usage of what works – not a question of being agile or not

Use what you learned – to be better at what you do
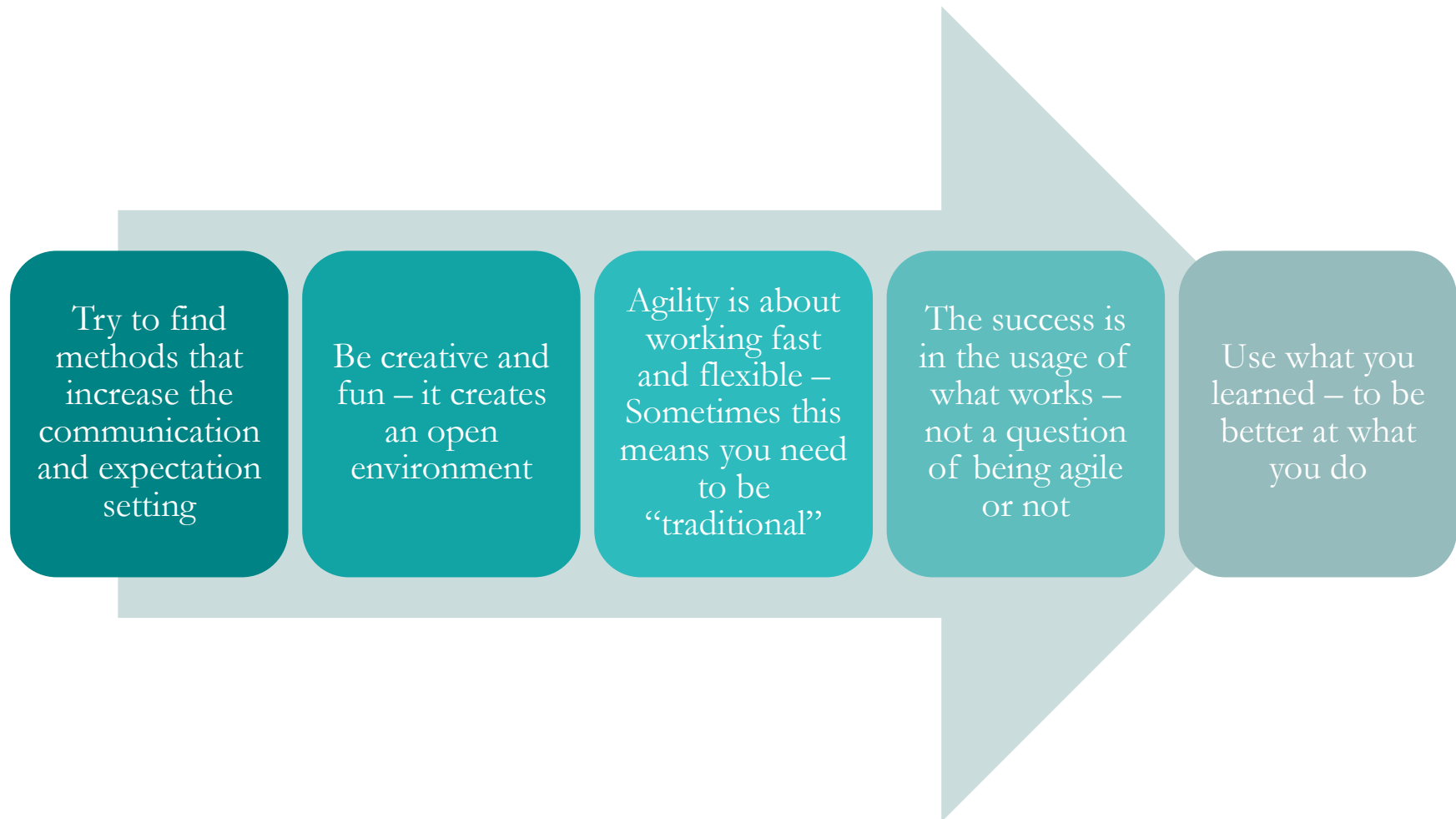
Questions?

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