

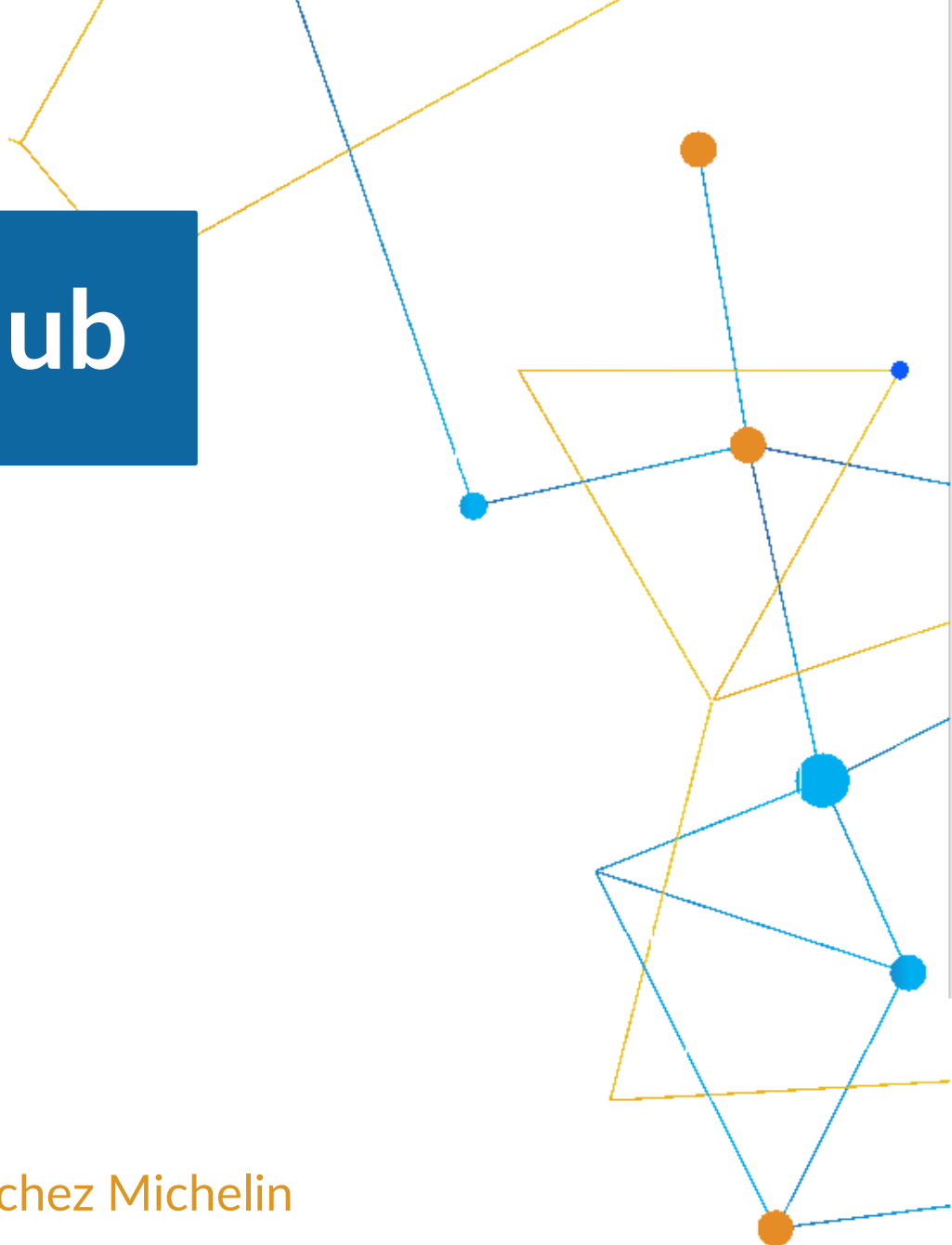
Anniversaire 20 ans +1 du Club

- Agility at Scale and Enterprise Architecture for Digital Transformation



Yves CASEAU

Group Chief Digital & Information Officer chez Michelin





Agility at Scale and Enterprise Architecture to support Digital Transformation

Yves Caseau

Group CIO, Michelin

NATF (National Academy of Technologies of France)



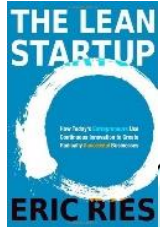
<https://twitter.com/ycaseau>

<http://informationsystemsbiology.blogspot.com/>

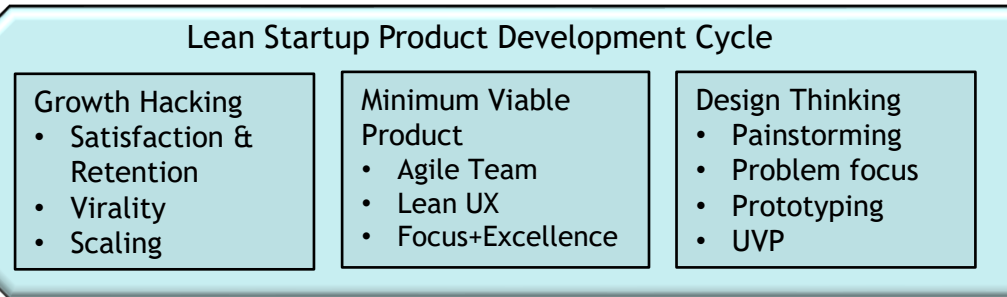
Club Urba - EA

September 16th, 2021 - v1.0

Outline



From Customer to Code, From Code to Customer

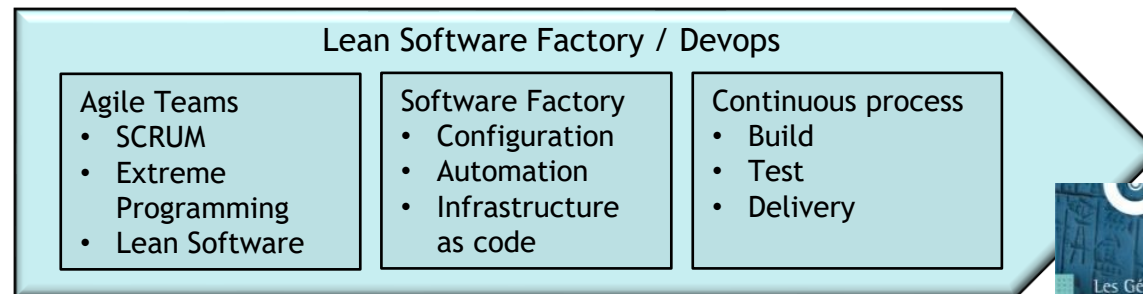


team

Product



Customer



- Part 1 : Agility at scale
- Part 2: Enterprise Architecture for Digital

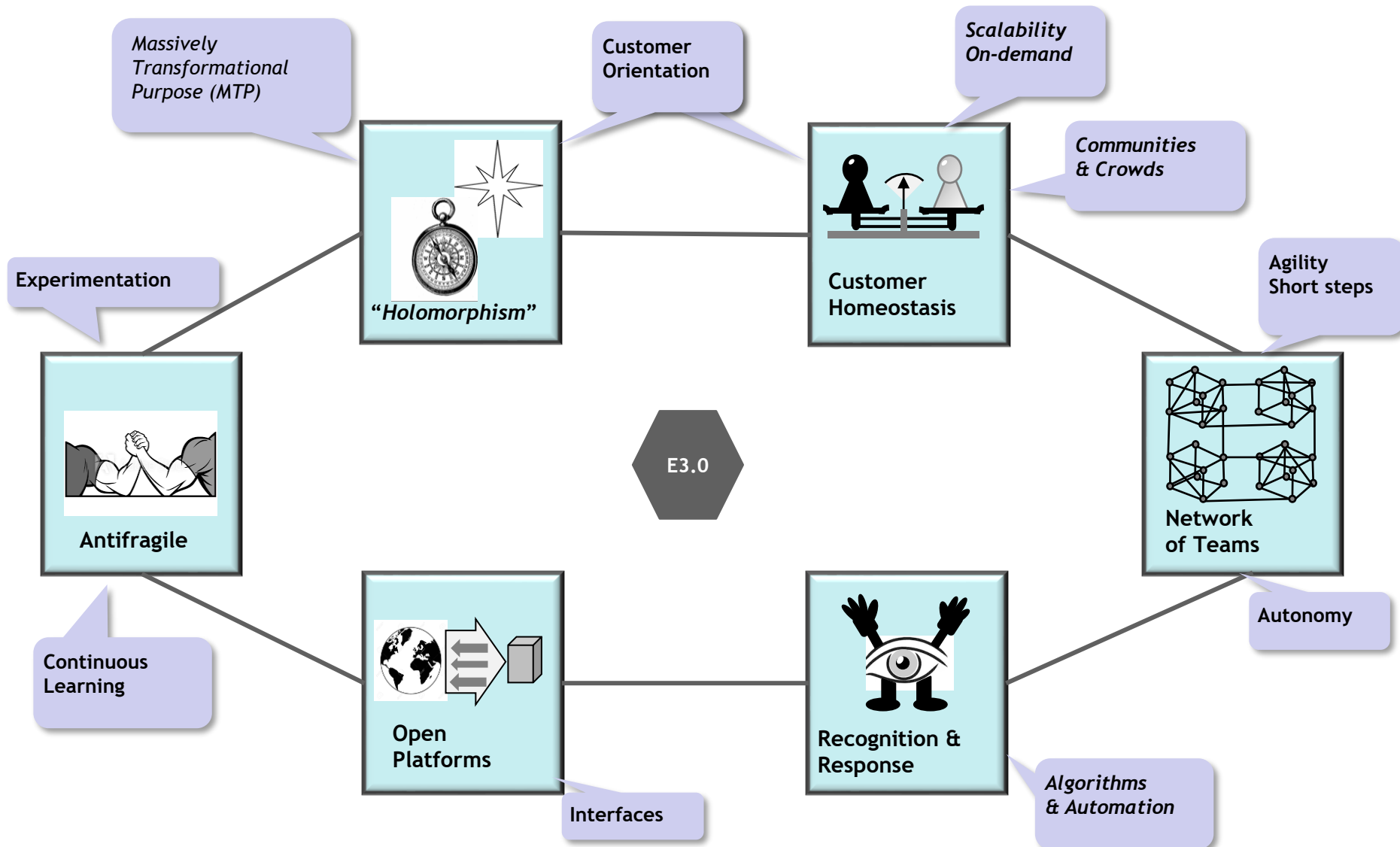
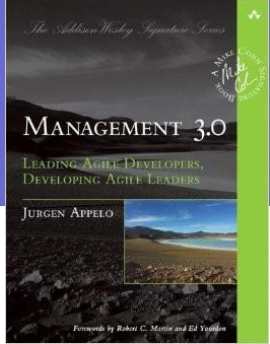
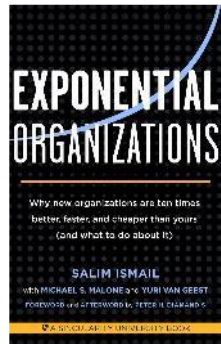
(software)
code

```

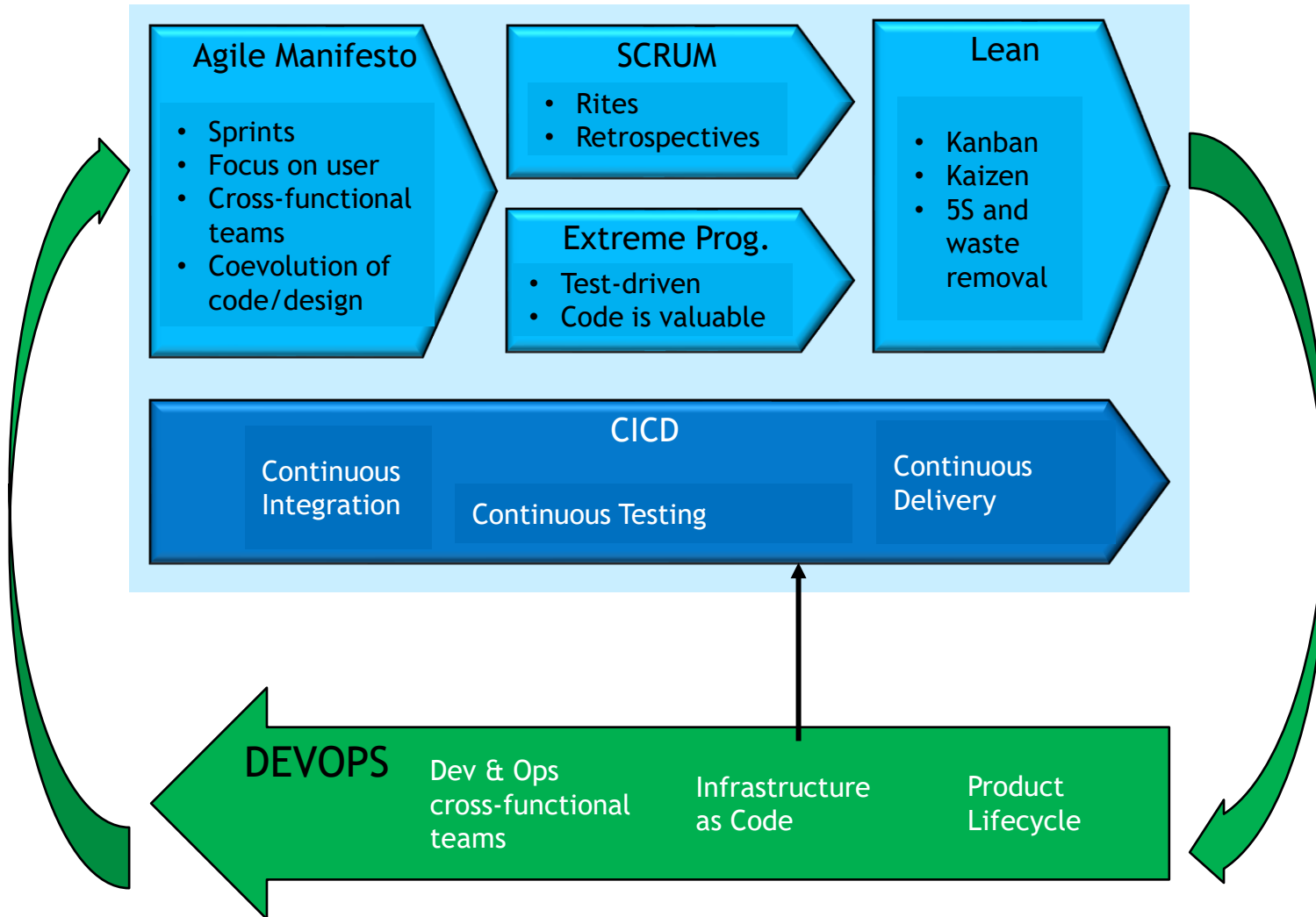
if first propagation rule
r1() :: rule( c.value => v =>
  (store(c.line.counts,v,0),
   store(c.column.counts,v,0),
   store(c.square.counts,v,0),
   for v2 in {1..8}
     if (v != v2 & c.possible[v2]) noLonger(c,v2),
     for c2 in (c.line.cells but c) forbid(c2,v),
     for c2 in (c.column.cells but c) forbid(c2,v),
     for c2 in (c.square.cells but c) forbid(c2,v)))

```

Enterprise 3.0



Lean Software Factories



- **Lean & Agile:** short-term delivery of small value increments, long-term iterative learning
- **Lean thinking :** continuous management of technical debt to develop « situation potential » (tomorrow's agility)
- **Lean practices :** right on the first time, continuous learning through kaizen
- **Product mode :** short-term delivery of small value increments, long-term iterative learning

Lean Software « micro-Factory » 12 Principles

Work is distributed and organized around autonomous cross-functional teams

The voice of the customer is present on the development floor

Development and progress are built iteratively, in small steps

All the construction, testing and deployment processes are instrumented

Teams work synchronously, around a common and shared representation of time

The team works in continuous integration mode and rebuilds its product daily

You must take care of your code, share it and make it shareable and readable

Problem solving is done in teams, and serves to develop transversal and systemic skills

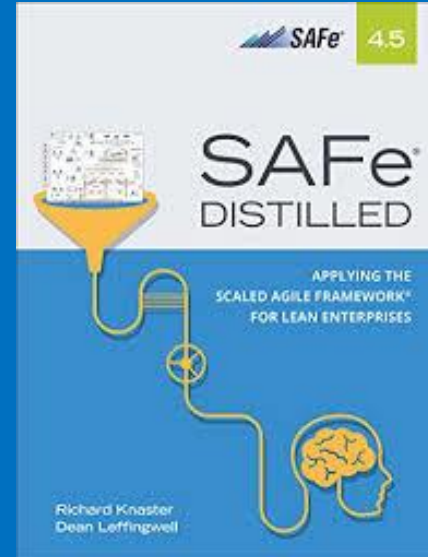
Walls must be used to take advantage of the power of "visual management"

Each team member produces what the others need at the right time, without accumulating

The key is to "catch what doesn't work" as early as possible, so you can get it right faster

The team deploys successive versions of its product at a regular and sustained pace

Agility at Scale



Scaling Required

- Agility is a mental model, necessary in a VUCA world at all scales
- Scaling Agile is difficult, but both possible and necessary
- Dunbar's number matches real-life experience

SAFe ?

- A framework to maintain the flow of value increments
- Useful scalable rituals : e.g., PI Planning, release train, cadence, ...
- Multi-scale / system thinking
- You may look at LeSS & DAD ☺

Don't

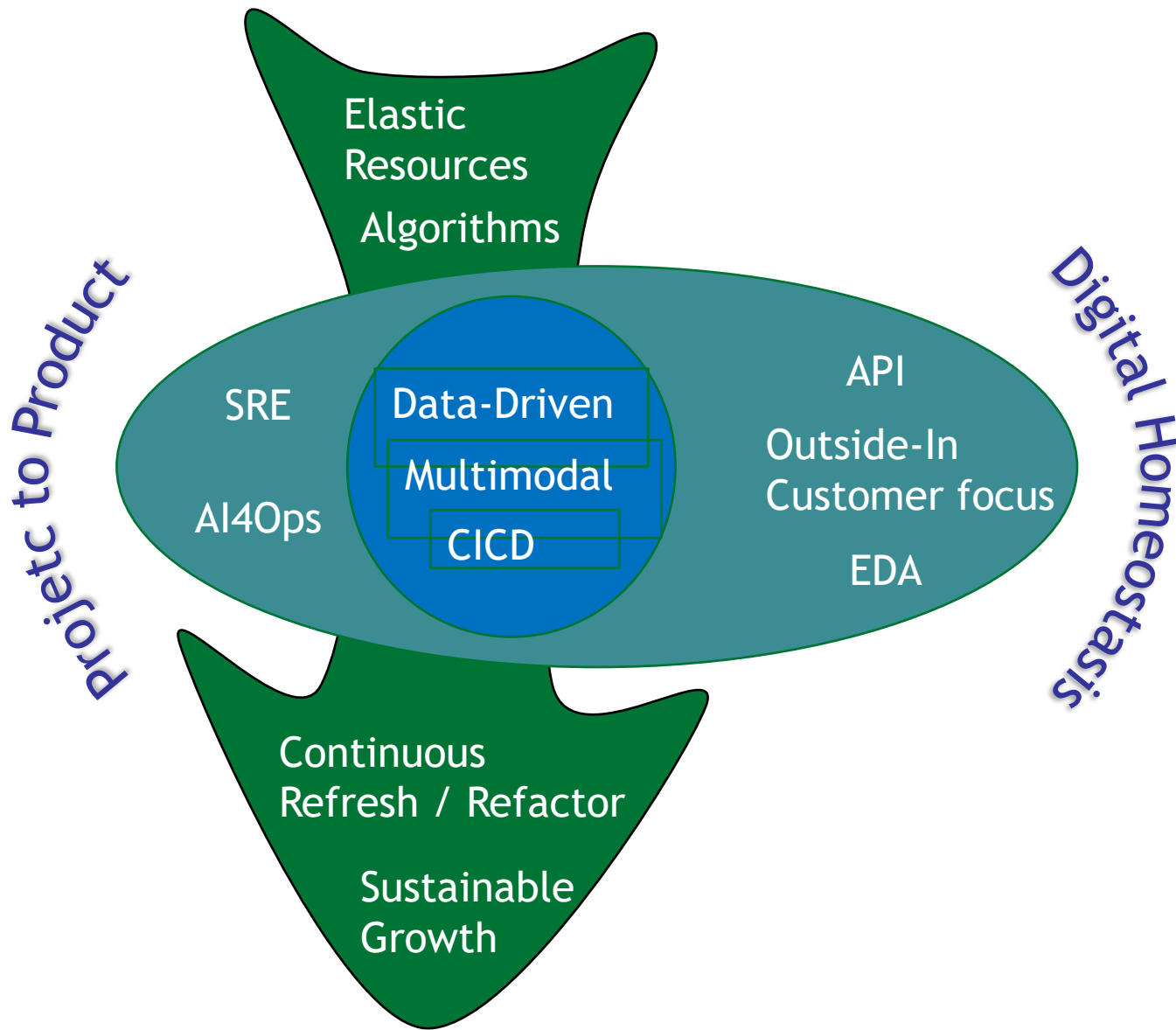
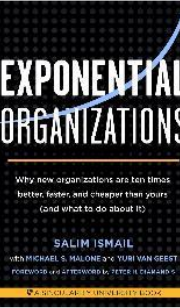
- Confuse agility with a set of practices ... keep software craftsmanship in mind
- Embed discovery in sprints (Lean Startup) : decouple ☺
- Revert to the illusion of control / try to eliminate uncertainty

Part II

Enterprise Architecture For Digital

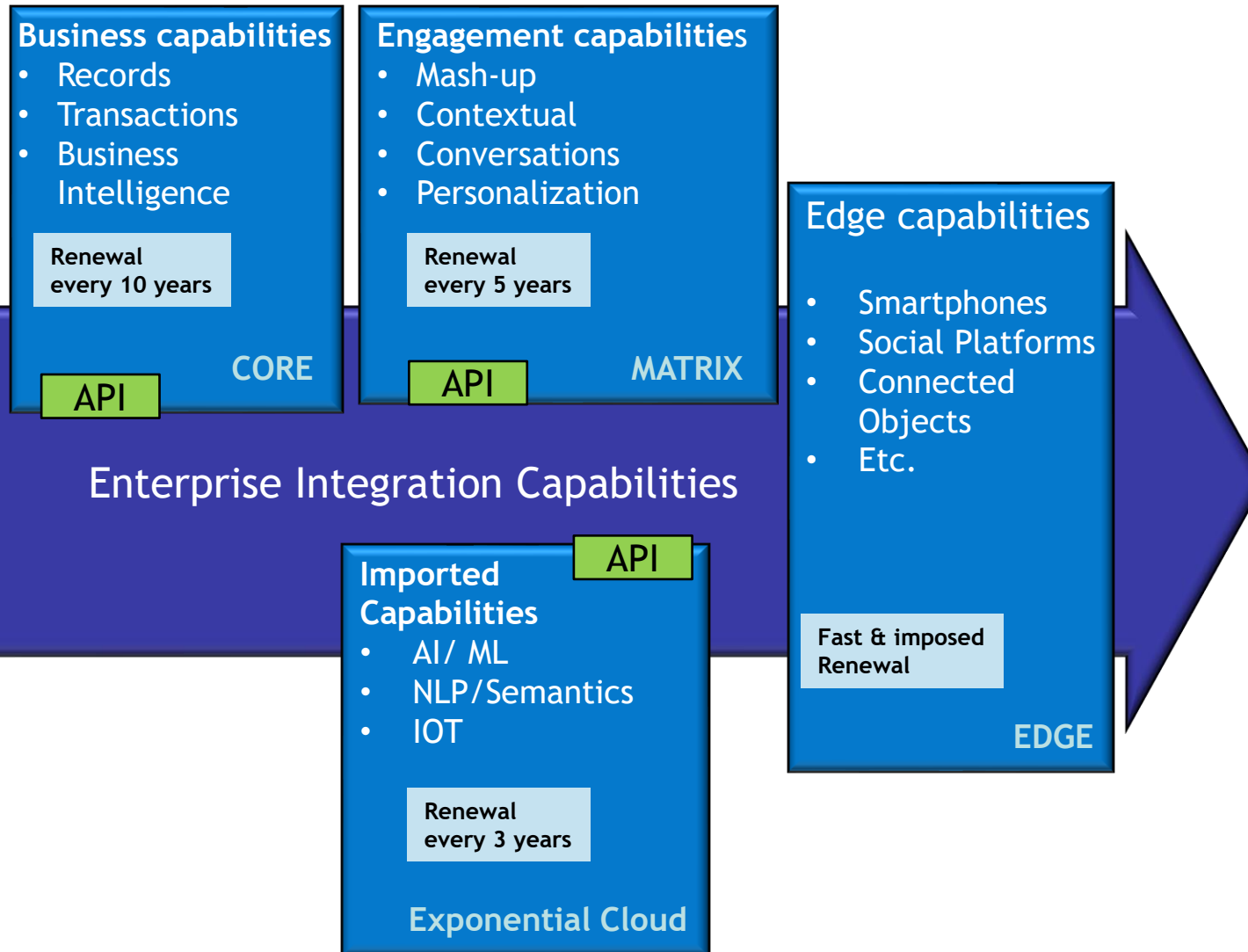


Exponential Information Systems Principles



- **Digital Homeostasis**
 - Outside-in
 - Reactive
 - Open frontiers
- **Accelerate Takt Time**
 - Automation
 - Short release cycles
- **Living System**
 - In/out breathing
 - Continuous architecture (emergence)

Architect for Change : Multimodal Architecture



- Four zones illustration: different rates of change, different software ecosystems
- Extension of bi-modal IT pattern (but everything must change)
- Edge is the software domain that is not controlled by IT but where it must project its services
- The supporting integration capabilities is a key enabler for digital transformation

Digital Architecture Ambitions

- ⦿ Complex systems require “antifragile” capitalization – focus on skills and collective learning
- ⦿ Complexity of “digital world usage” requires to listen to the user, really well, quite often
- ⦿ Complexity of iterative processes needs to be balanced by refactoring (gardening) – from project to product to system
- ⦿ Software craftsmanship matters. Agility is also a system property !

The Role of Lean Architecture

- Architects on-demand
- System engineering coach and champion
- Refactoring champion - promotes TD cleaning in backlog
- API interface and “integration grammar” leader

The faster the world changes, the heavier the TD burden



Conclusion



- **Architecture for change:** the first digital transformation impact is change acceleration
- **Scale matters...** the expected level of experience excellence has changed in the digital era
- “*Sustainable design of live systems*”
a *lean* mindset and culture, based on tools, discipline and **software craftsmanship**



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Pour plus d'information,



<https://www.urba-ea.org/>