

THE AGILE ARCHITECT

Craftsmanship on a different level

Uwe Friedrichsen – XP Days – Karlsruhe – November, 17. 2011

ABOUT ME ...

Name: Uwe Friedrichsen

Professional experience: Several years ...

Focus areas:

- Making teams, projects and systems successful – with a special focus on architecture and agility
- Holistic thinking, connect ideas and concepts, make people think
- New technologies & concepts

Current position: CTO at codecentric AG



AGENDA

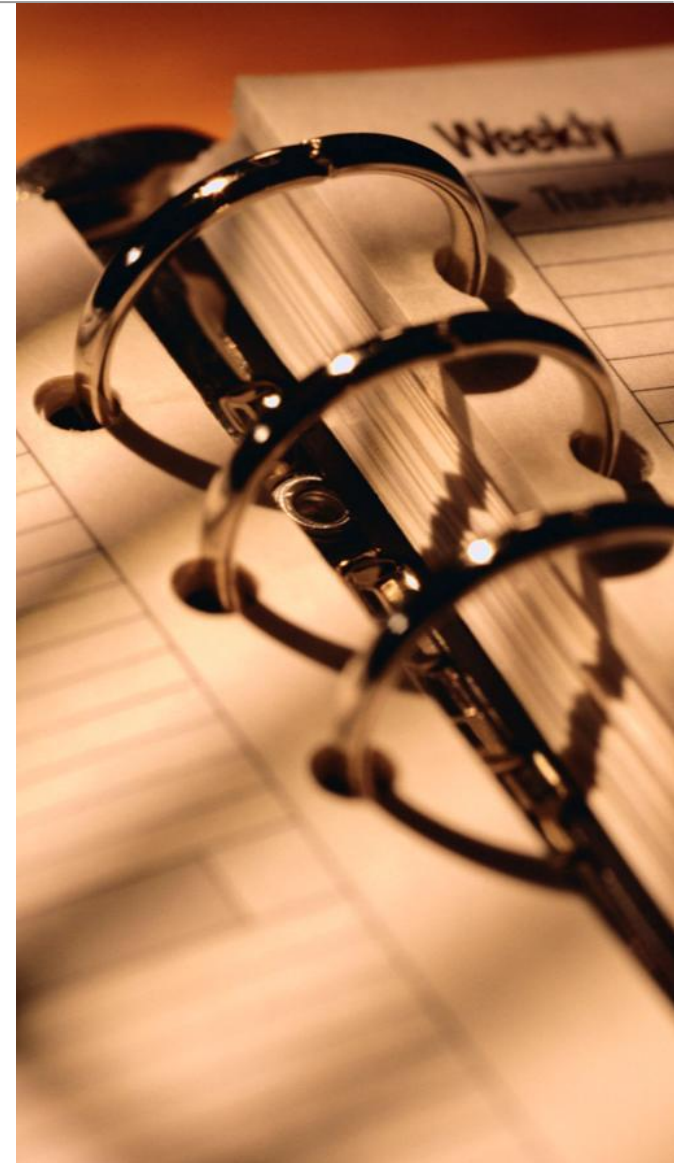
Why architecture is important for software craftsmen

Can't it all just be „emergent“

What's special about architectural skills

What topics besides design should I care about

How to continue the journey



A little disclaimer upfront ...

A long wooden ladder is shown from a low angle, leaning against a bright blue sky filled with scattered white clouds. The ladder's rungs and side rails are made of light-colored wood and recede into the distance, creating a strong sense of perspective.

Architect is not a job.
It's a skill.

And if you don't have that skill in your team, you are in deep trouble

Manifesto for Software Craftsmanship

Raising the bar.

As aspiring Software Craftsmen we are raising the bar of professional software development by practicing it and helping others learn the craft. Through this work we have come to value:

Not only working software,

but also well-crafted software

Not only responding to change,

but also steadily adding value

Not only individuals and interactions,

but also a community of professionals

Not only customer collaboration,

but also productive partnerships

That is, in pursuit of the items on the left we have found the items on the right to be indispensable.

An aerial photograph of a vast, snow-covered mountain range. The peaks are jagged and covered in white snow, with some dark rock visible. The mountains are set against a clear, deep blue sky. The foreground shows a wide, snow-covered valley with some rocky outcrops. The overall scene is majestic and serene.

Broadening our field of vision a bit:
The ultimate goal of any good craftsman is ...



Delivering Wow!



But what if ...

And what if your deliverable is not as simple as this one ...



... but as complex as this





That's all about architecture

WHAT IS ARCHITECTURE ABOUT?

Why?



Goals

- **Maximise satisfaction** of all involved **stakeholders** throughout the lifecycle of the concerned system
- **Minimise total costs** (across all types of costs) affected by the system throughout the lifecycle of the system

How?



Activities

- **Implement** non-business features (NFRs)
- **Structure** the solution domain (Manage complexity)
- **Align** the solution to its mission (Manage **changeability**)

What?



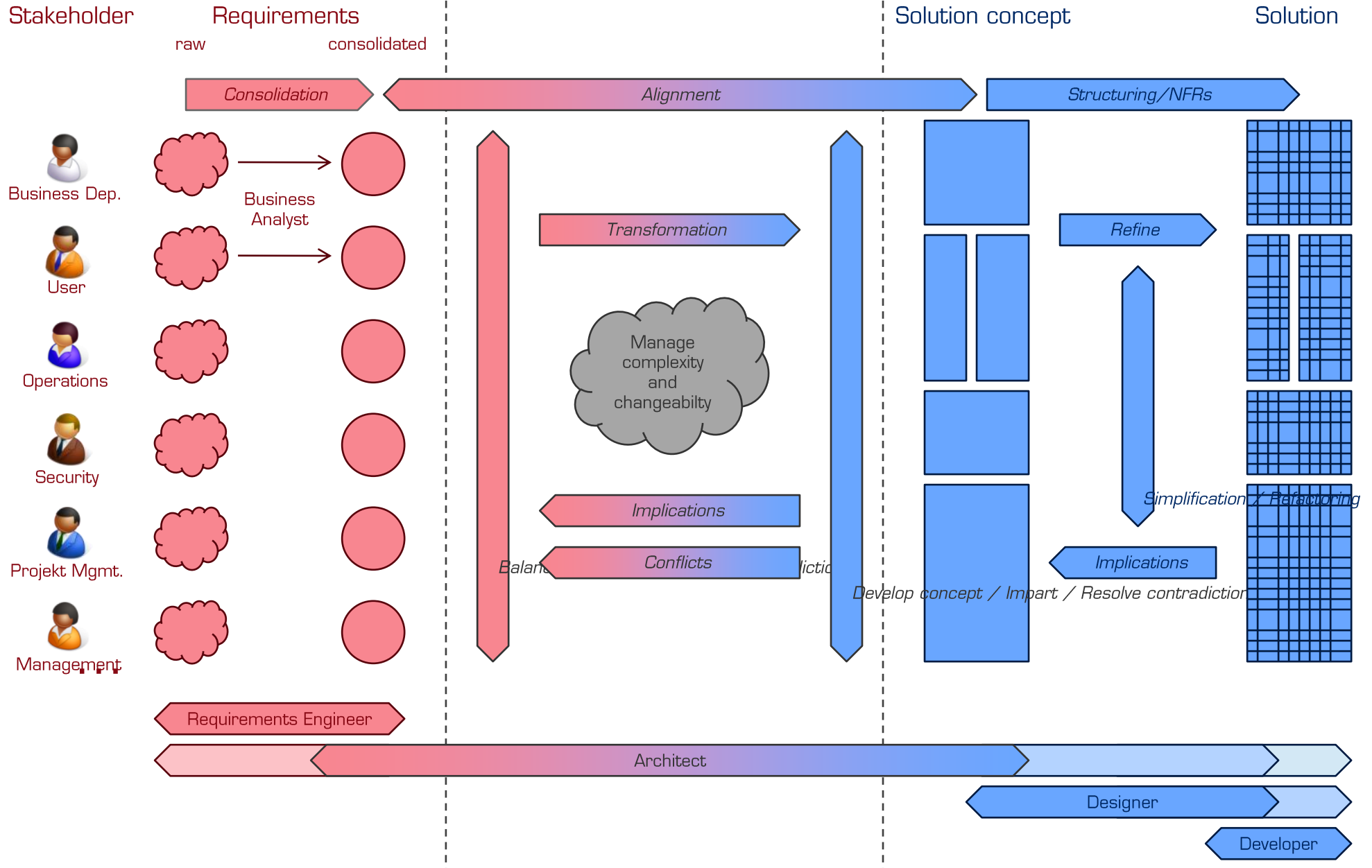
Objectives

- Achieve the required **quality attributes**
- Management of **complexity** and **changeability** throughout the lifecycle of the concerned system

Requirements domain

„The big gap“

Solution domain



Without architecture ...



Problem Domain
(Requirements)



Solution Domain
(Software System)

NFRs



Problem Domain
(Requirements)



Solution Domain
(Software System)

Structuring
& NFRs



Problem Domain
(Requirements)



Solution Domain
(Software System)

Alignment

Structuring
& NFRs



Problem Domain
(Requirements)

Solution Domain
(Software System)

Alignment

Alignment

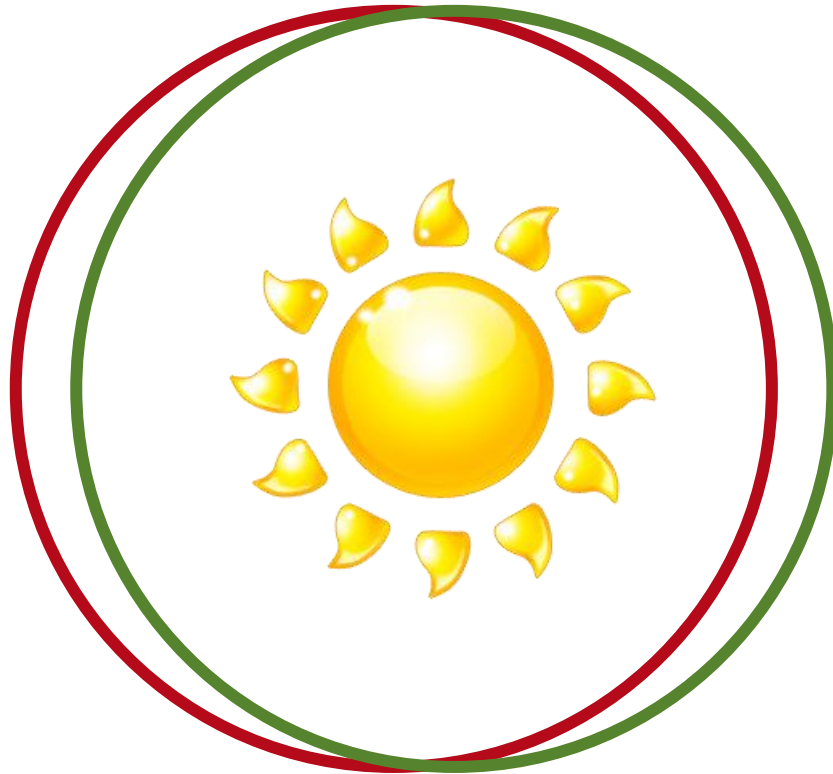
Structuring
& NFRs



Problem Domain
(Requirements)

Solution Domain
(Software System)

Architecture



Problem Domain
(Requirements)

Solution Domain
(Software System)

The 3 C's of Architecture:

The background of the slide is a photograph of the Sydney Opera House, a world-famous architectural landmark. The building's iconic white, shell-like roof is the central focus. In the background, the Sydney city skyline is visible, including the Sydney Tower Eye and several other skyscrapers. The Opera House is situated on the water's edge, and a blue and white ferry boat is seen moving across the water in the foreground. The sky is a clear, bright blue.

Constraints (aka NFRs)

Complexity (aka Structure)

Change (aka Alignment)

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A long wooden ladder is leaning against a bright blue sky filled with white, fluffy clouds. The ladder is made of light-colored wood and extends from the bottom left towards the top right of the frame.

Architect is not a job. It's a skill.

And if you don't have that skill
in your team,
you are in deep trouble!

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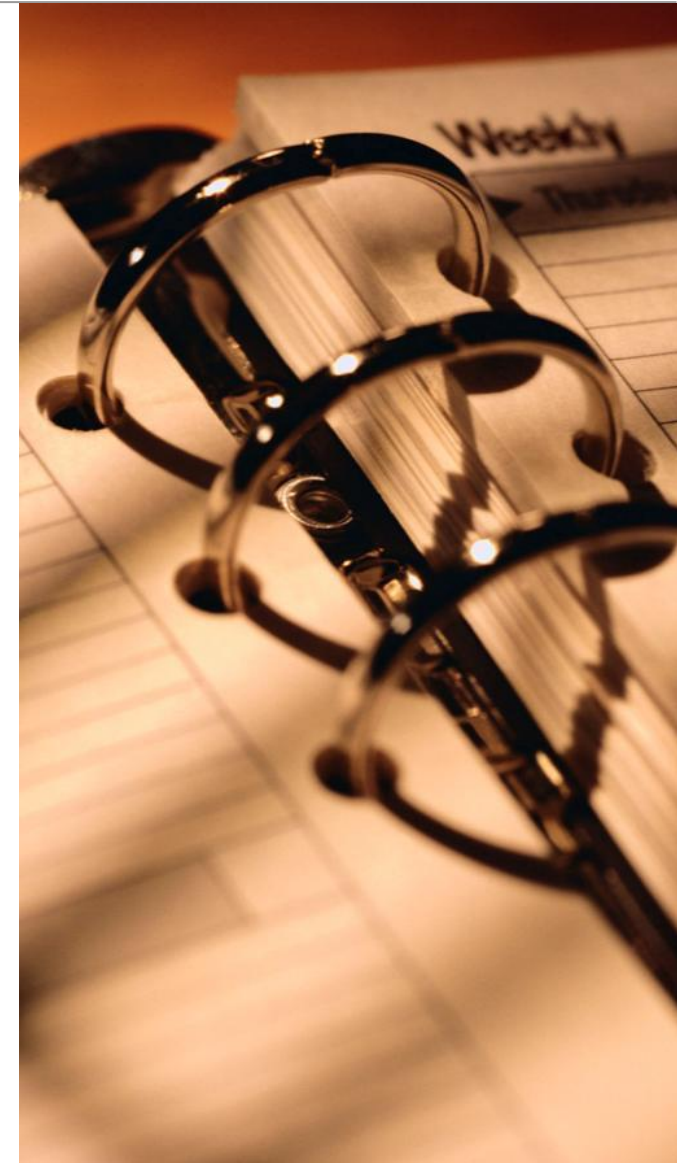
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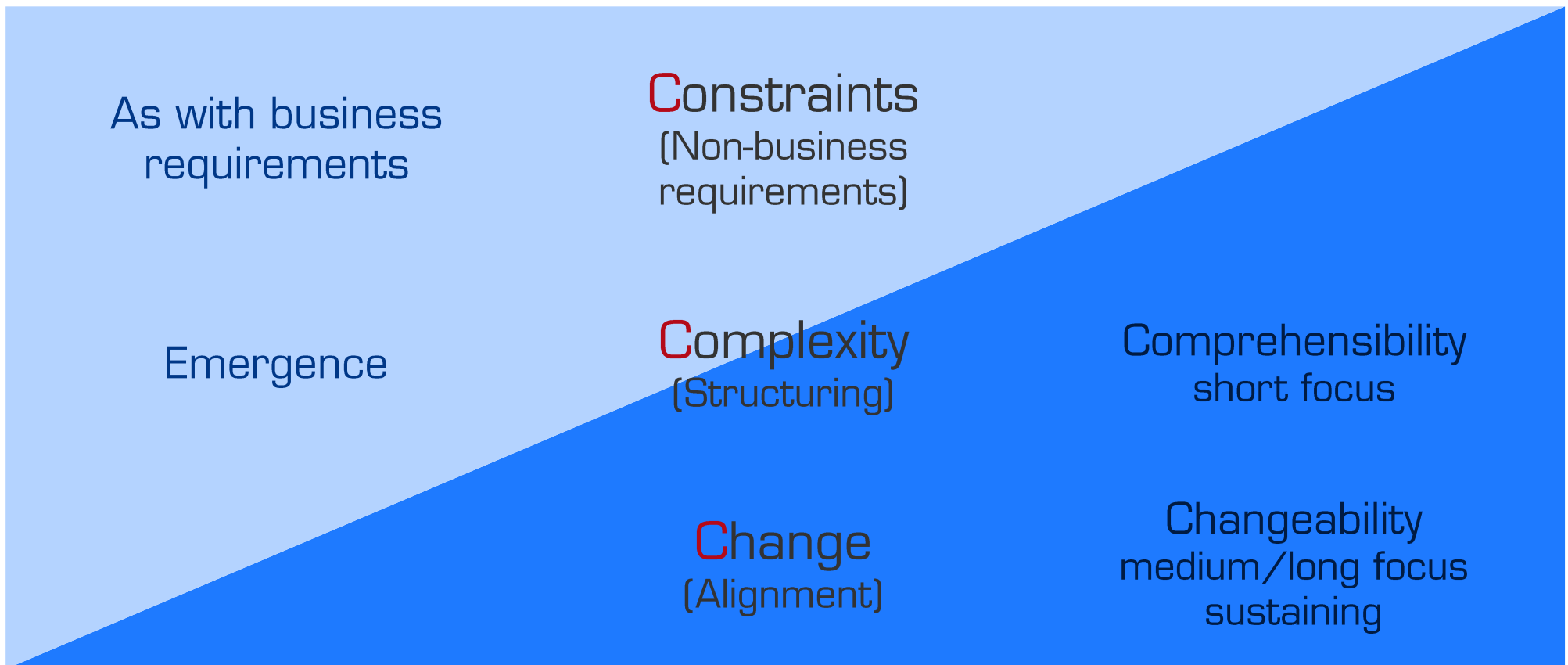


**Chances and limitations
of emergent architecture**

INTERDEPENDENCIES: ARCHITECTURE & AGILITY

Agility → Architecture

Architecture → Agility



A close-up photograph of bamboo stalks with green leaves, used as a background for a text overlay. The bamboo stalks are vertical and segmented, with distinct nodes. The leaves are long and narrow, some showing signs of aging or damage. The background is a soft-focus forest of bamboo.

And what about flexibility?



The Future Unpredictability Dilemma

System Architecture

Constant

- Domain Essence (Form)
- Log-term stability
- Understand domains, extract essence, design and implement
- Additionally have a look at change frequency, Conways law, ???

Partially constant

- Structure for change (aligned with Direction of change)
- Mid-term stability
- Understand business and IT drivers, trends and strategies, align structure and variability points with it
- Validate regularly (architecture assessment)

Variable

- Detailed structure
- Changes frequently
- Develop emergent utilizing suitable design principles (i.e. SOLID)

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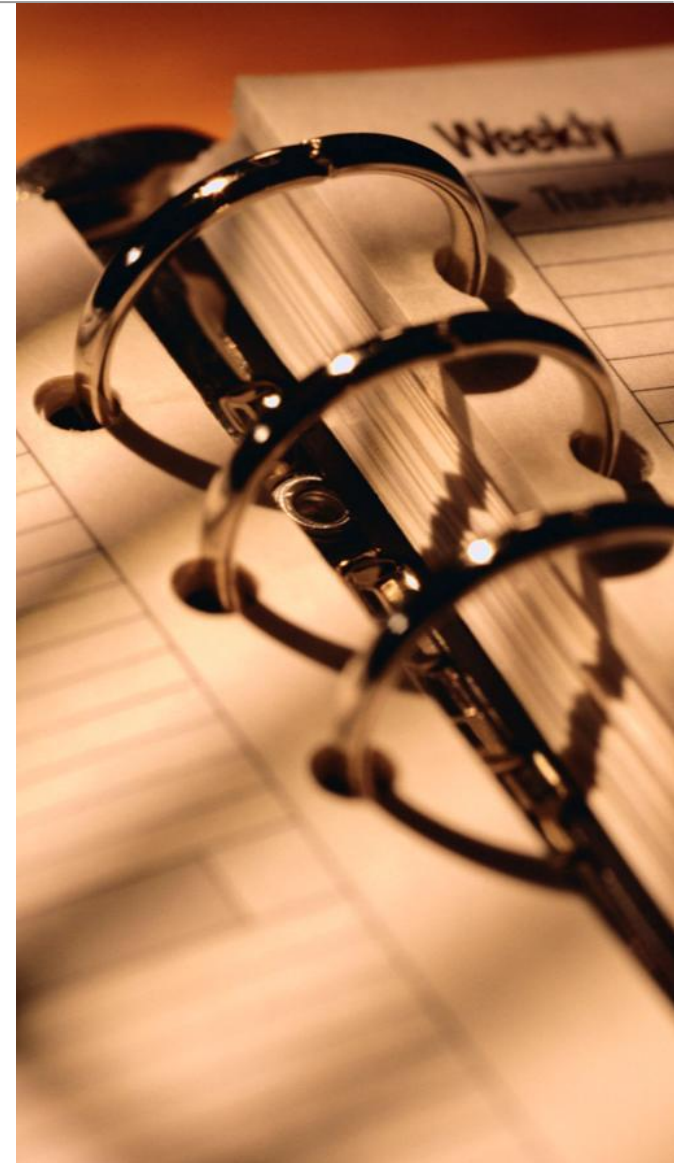
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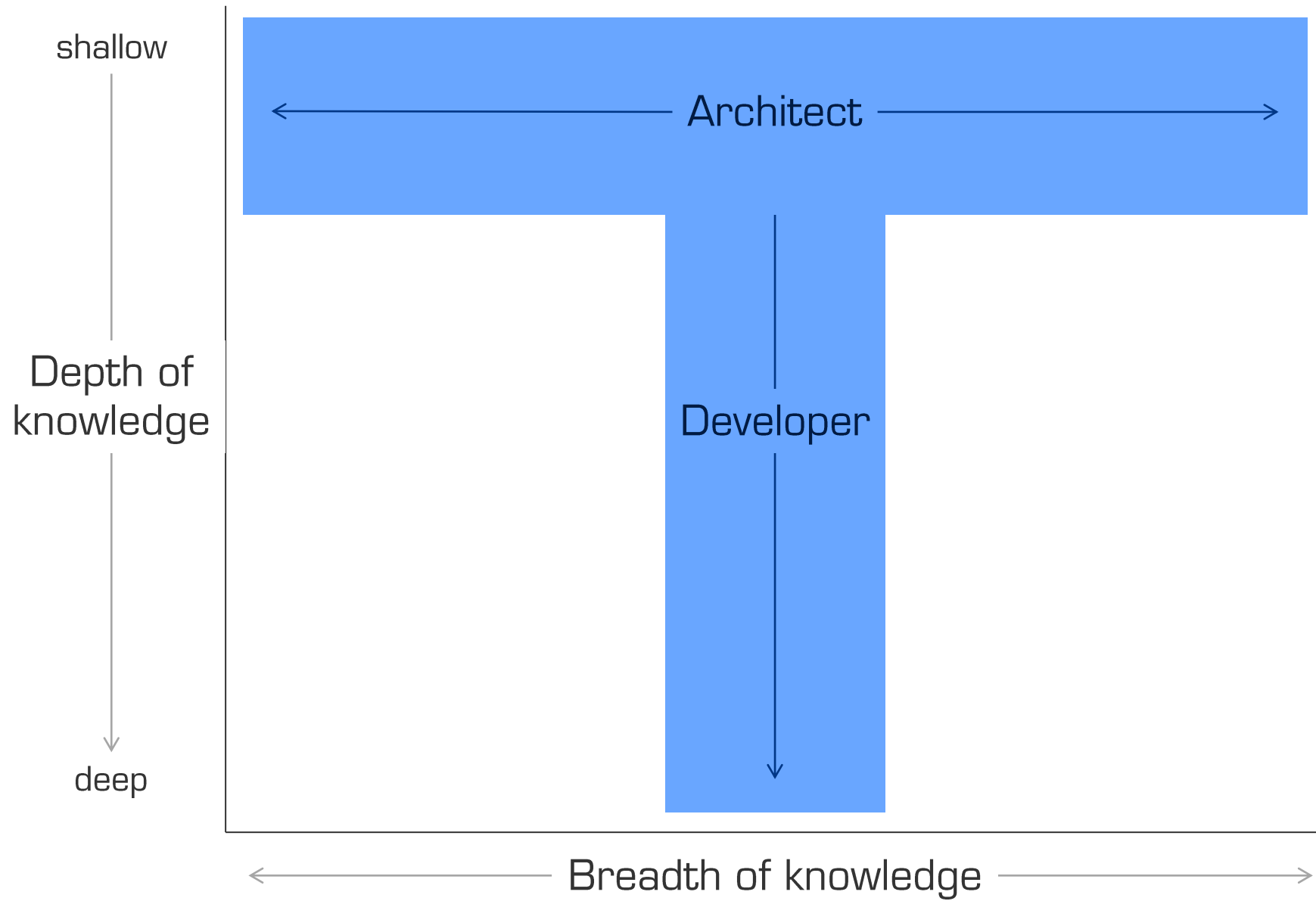
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Architect Competency Framework (Bredemeyer Consulting)

	What you KNOW	What you DO	What you ARE
Leadership	<ul style="list-style-type: none"> • Yourself 	<ul style="list-style-type: none"> • Set team context (vision) • Make decisions (stick) • Build teams • Motivate 	<ul style="list-style-type: none"> • You and others see you as a leader • Charismatic and credible • You believe it can and should be done, and can lead the effort • You are committed, dedicated, passionate • You see the entire effort in a broader business context
Consulting	<ul style="list-style-type: none"> • Elicitation techniques • Consulting frameworks 	<ul style="list-style-type: none"> • Build “trusted advisor” relationships with clients • Mentor junior architects • Understand what developers need from the architecture • Help developers see / utilise the value of the architecture 	<ul style="list-style-type: none"> • Committed to others’ success • Empathetic, approachable • An effective change agent, process savvy • A good mentor, teacher
Organisational Politics	<ul style="list-style-type: none"> • Who the key players are in the organization • What they want, both business and personal 	<ul style="list-style-type: none"> • Communicate, communicate, and communicate! • Listen, network, influence • Sell the vision, keep the vision alive • Take and retake the pulse of all critical influencers of the architecture project 	<ul style="list-style-type: none"> • Able to see from and sell to multiple viewpoints • Confident and articulate • Ambitious and driven • Patient and not • Resilient • Sensitive to where the power is and how it flows in your organization
Business Strategy	<ul style="list-style-type: none"> • Your organization’s (your clients’) business strategy and rationale • Your (your clients’) competition (products, strategies and processes) • Your company’s (your clients’) business practises 	<ul style="list-style-type: none"> • Influence business strategy • Translate business strategy into technical vision and strategy • Understand customer and market trends • Capture customer, organizational and business requirements on the architecture 	<ul style="list-style-type: none"> • Visionary • Entrepreneurial
Technology	<ul style="list-style-type: none"> • In-depth understanding of the domain and pertinent technologies • Understand what technical issues are key to success • Development methods and modelling techniques 	<ul style="list-style-type: none"> • Modelling, Trade-off analysis • Prototype/ experiment/ simulate • Prepare architectural documents and presentations • Technology trend analysis/roadmaps • Take a system viewpoint 	<ul style="list-style-type: none"> • Creative / Insightful • Investigative • Practical/pragmatic • Tolerant of ambiguity, willing to backtrack, seek multiple solutions • Good at working at an abstract level

Architect Competency Framework (Bredemeyer Consulting)

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Consulting	<ul style="list-style-type: none"> • Elicitation techniques • Consulting frameworks 	<ul style="list-style-type: none"> • Build "trusted advisor" relationships with clients • Mentor junior architects • Understand what developers need from architecture • Help developers see the architecture 	<ul style="list-style-type: none"> • Accessible • Intelligent, process savvy
Organisational Politics	<ul style="list-style-type: none"> • Who the key players are in the organization • What they want, both business and personal 	<ul style="list-style-type: none"> • Communicate • Listen • Drive for all critical architecture project 	<ul style="list-style-type: none"> • Able to see from and sell to multiple viewpoints • Confident and articulate • Ambitious and driven • Patient and not • Resilient • Sensitive to where the power is and how it flows in your organization
Business Strategy	<ul style="list-style-type: none"> • Your organization's business strategy • Your (your organization's) products • Your business 	<ul style="list-style-type: none"> • Translate business strategy into technical vision and strategy • Understand customer and market trends • Capture customer, organizational and business requirements on the architecture 	<ul style="list-style-type: none"> • Visionary • Entrepreneurial
Technology	<ul style="list-style-type: none"> • Technologies • Key technical issues are • Development methods and modelling techniques 	<ul style="list-style-type: none"> • Modelling, Trade-off analysis • Prototype/ experiment/ simulate • Prepare architectural documents and presentations • Technology trend analysis/roadmaps • Take a system viewpoint 	<ul style="list-style-type: none"> • Creative / Insightful • Investigative • Practical/pragmatic • Tolerant of ambiguity, willing to backtrack, seek multiple solutions • Good at working at an abstract level

Change

Complexity

Constraints



Should we give up?



No!

of course not

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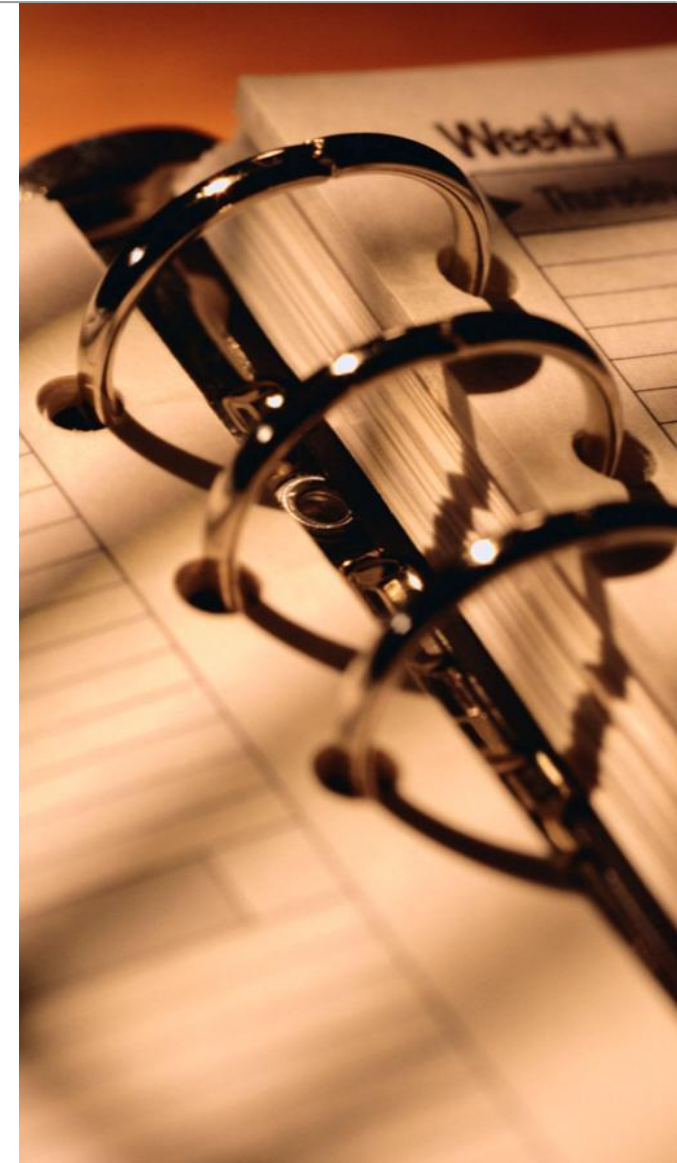
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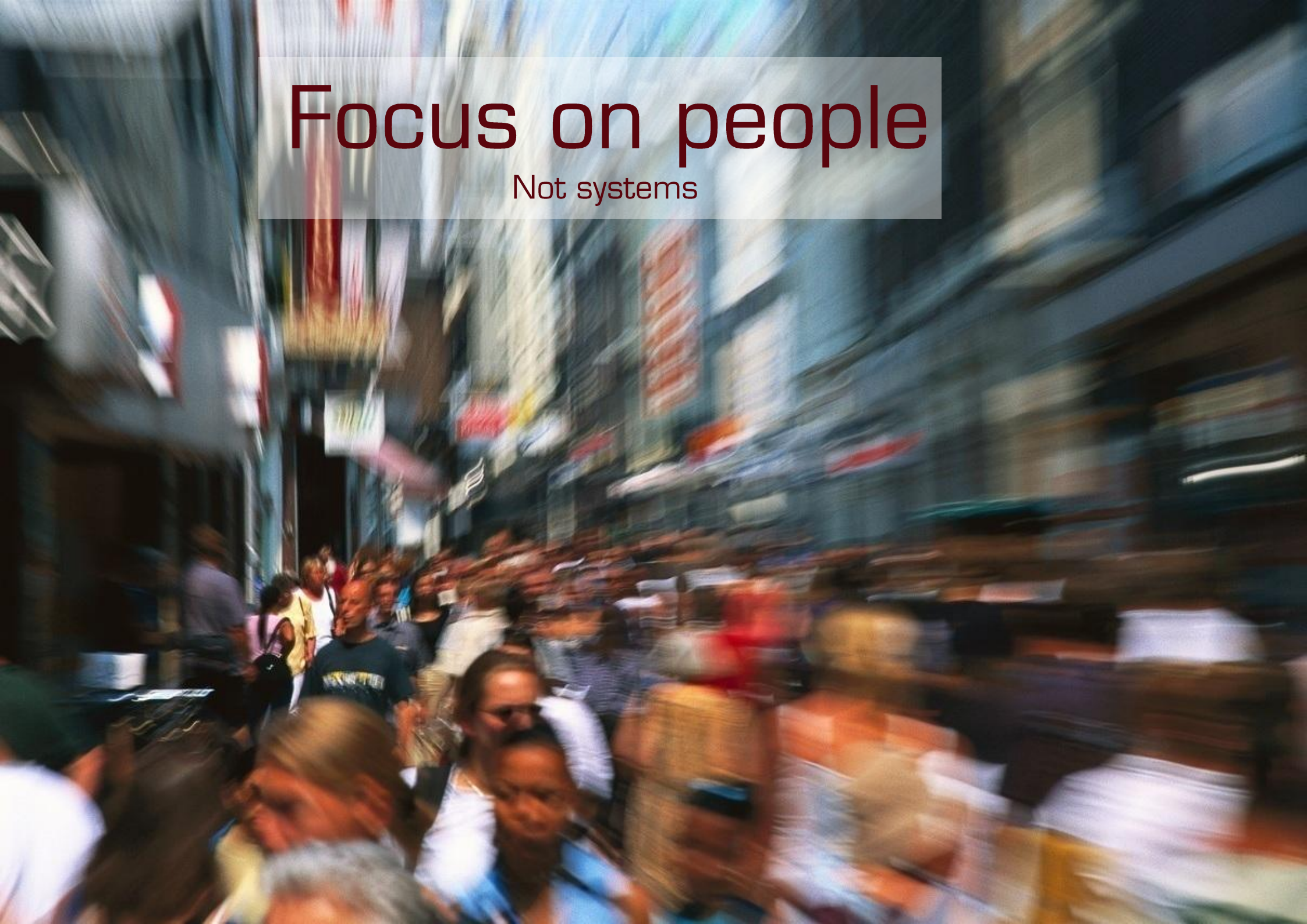




Go on a journey

Focus on people

Not systems





Less is more!

L. Mies van der Rohe

THANK YOU FOR YOUR ATTENTION!

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QUESTIONS & DISCUSSIONS

