Torbjörn Gyllebrin
The Reverse Conway
Organizational Hacking for Techies
Public service announcement

shout@drunkcod.com
“We can't control systems or figure them out. But we can dance with them!”
Find a friend or few...

Who are the key players determining the architecture in your organization?

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Organizational structure influence software architecture. Architectural decisions influence organizational design.

The key to understand and manage both is an appreciation for the flow of information between modules or agents.
Your host: Torbjörn “Tobbe” Gyllebring

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Conway’s Law
How Do Committees Invent?

“Organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations”

-Melvin Conway
All models are broken ...

What would some implications be if this was true?
“The organization of the software and the organization of the software team will be congruent; If you have four groups working on a compiler, you’ll get a 4-pass compiler”

-Eric S Raymond
One of the most important design decisions for your system, is the shape of the group that designs it!
That’s a fine theory.
Exploring the Duality between Product and Organizational Architectures

The mirroring hypothesis predicts that these different organizational forms will produce products with distinctly different architectures. Specifically, loosely-coupled organizations will develop more modular designs than tightly-coupled organizations. [...] We find strong evidence to support the mirroring hypothesis.[... ] Our results have significant managerial implications, in highlighting the impact of organizational design decisions on the technical structure of the artifacts that these organizations subsequently develop.
The Reverse Conway

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The Reverse Conway

Any change to communication patterns of groups and individuals will influence the shape of their solutions.

Thus the design of a system will influence the de facto workings of an organization.
The surprising truth about Architecture

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How we usually think about Architecture
Functional Decomposition
On the Criteria To Be Used In Decomposing Systems Into Modules

“...it is almost always incorrect to begin the decomposition of a system into modules on the basis of a flowchart. We propose instead that one begins with a list of difficult design decisions or design decisions which are likely to change.”

-David Parnas
Reasons your architecture isn’t a mess

• It’s a new, small, system
• You’re delusional
• Stockholm Syndrome
• You’re ignorant
• You got it right, it matches the underlying problem
The sociological view of Architecture
Architecture governs the habitability of systems.
Architectural decisions shape day to day working conditions
Wait a second...
“Agile Coach?”
Archetypes
Hierarchical Decomposition

A

B  C

D  E
Pipeline

A → B → C → D

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Organizational Refactoring
Information.
Hiding and Leaking.
Small(ish) Examples
Handling a remote team
Saving a Local Mudball
Saving a Local Mudball

1. Formalize Module Boundaries
2. Repartition Responsibilities Between Groups

Main challenge – keeping responsiveness.
Tension, Governance and an Ivory Tower
Scaling Conway

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Amazon, Services and Two Pizza Teams

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Spotify - raise of networked tribes

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Conclusions
Organizational design influences architecture

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Architecture influence
organizational design
Information flows govern the shape of the solution space
Pair your “Coach” with your “Architect”
Obey gravity Conway
it’s the law!