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Muddy Rain: Seeding Clouds with the “Big Ball of Mud”

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Credit Suisse Group today – key facts

- Global bank headquartered in Zurich, serving clients in private banking, investment banking and asset management. Among top 5 or 10 global banks, depending on metric (revenue, assets)
- Registered shares of Credit Suisse Group AG (CSGN) are listed in Switzerland (SIX) and as American Depositary Shares (CS) in New York (NYSE).
- Total number of employees: 49,000.
- IT employees about third of the total – IT spend ~$4B annually

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Complexity: Our top IT challenge

Today‘s IT systems have the following characteristics:

- Very-large-scale: more than 6000 applications with more than 100M Lines of Code
- Interdependent: large number of tightly coupled, networked components
- Aging: parts of the system are becoming obsolete and must be replaced (obsolete technology, end-of-life applications)
- High rate of change: continuous flow of new business requirements which must be implemented (Several 1000 application changes per week)
- Demanding operational quality: systems must have high reliability, good availability, sufficient security etc.

Legacy IT Environments: "Unmanaged Evolution"

- Lack of enterprise architecture

  "*A **Big Ball of Mud** is a haphazardly structured, sprawling, sloppy, duct-tape-and-baling-wire, spaghetti-code jungle. These systems show unmistakable signs of unregulated growth, and repeated, expedient repair.* *

- This is no one's fault – it is a natural part of IT evolution
  - "Foote and Yoder do not universally condemn "big ball of mud" programming, pointing out that this pattern is most prevalent because it works — at least at the moment it is developed. However, programs of this pattern become maintenance nightmares."

* http://en.wikipedia.org/wiki/Big_ball_of_mud The term was popularized in Brian Foote and Joseph Yoder's 1999 paper of the same name, from which this definition is taken.

“Shanty Town” (from Big Ball of Mud)

- It’s not really fair to call our IT a shanty town
  - Many of our applications are well designed
  - For the most part, the applications do their job
- But the analogy holds
  - Lack of common infrastructure
  - Lack of common design standards
  - Hard to fix, maintain, and improve

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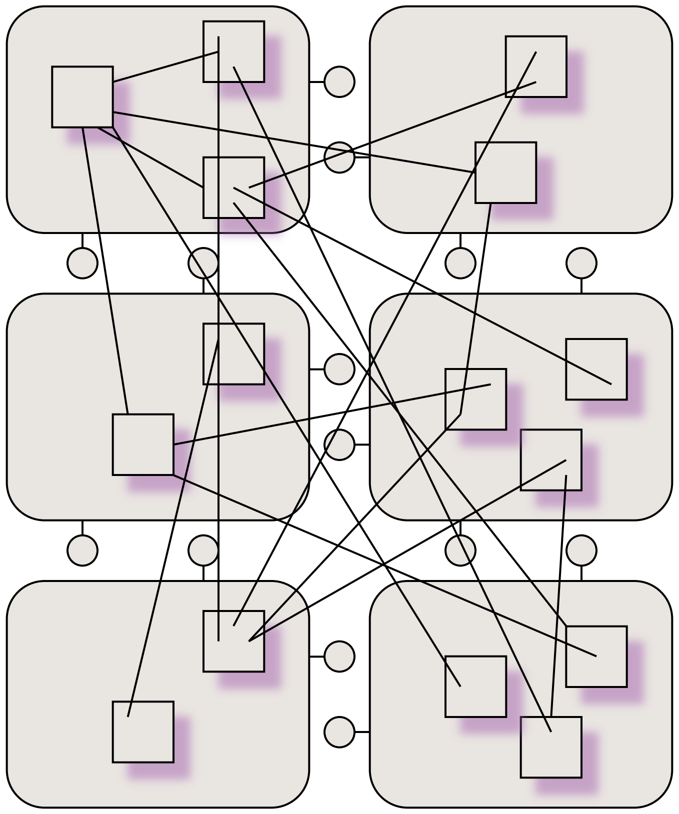
Managing Evolution via SOA-Designed Components: reduce complexity and increase effeciency

1. Monolithic landscape with uncontrolled dependencies

2. Grouping data and functions into components

3. Decoupling components through services



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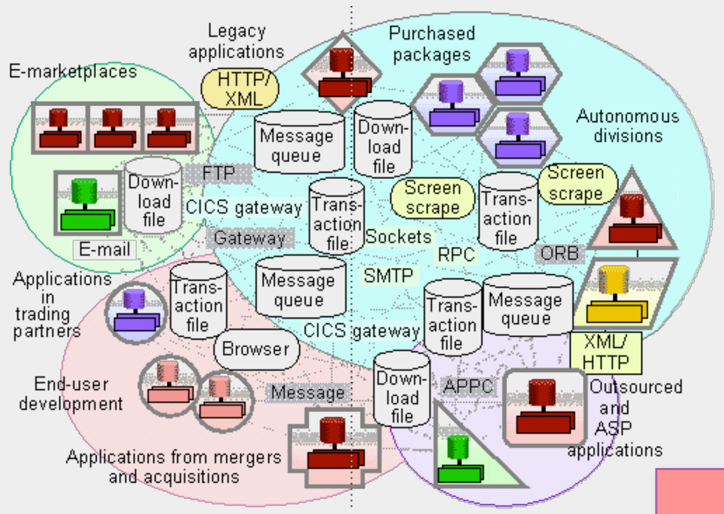


Almost all of the business applications of the enterprise were not written using consistent architecture. Instead they are byproducts of the evolution of IT:

-Mainframe transactions

-C++ Client/Server Apps

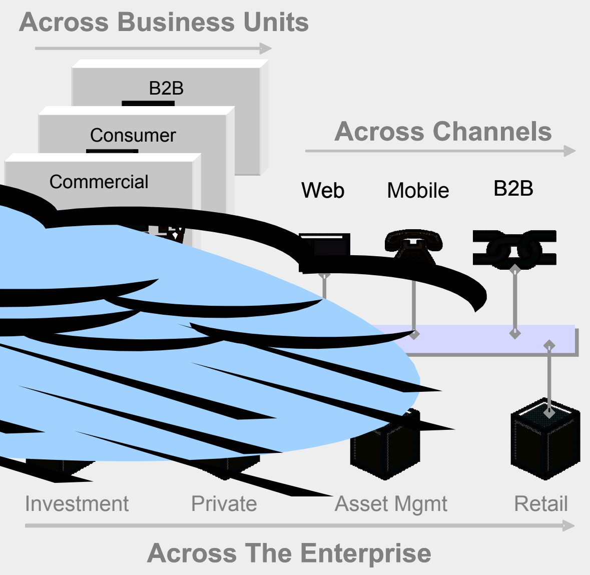
-Middleware Islands

-Home Grown / Dark Matter

-Java / .NET mixture

Solution: Expose and modularize existing enterprise systems as software services

- Plug-i
  and pro
- Encapsulate the
- Deploy the services on today’s mod
  platforms



Building our own private cloud

- Because we' re a bank, and a Swiss bank at that
  - Huge security concerns, especially Swiss client data
- What cloud model are we following:
  - Amazon EC2
  - No cloud models with specific APIs or language limitations
- Building on top of virtualization
  - Our initial offering is customized VMware, basically
  - Next offering (already available) is "EC2" like
- Some non-confidential services may go to EC2
  - Some prototypes have been done
  - Public data applications may go
- As security get better, more apps will go
  - We would like the capabilities to span internal/external boundaries
- Use RESTful and/or WS* implementations of SOA?