TA-Consulting
Management for Success

Systems Implementation

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BCS Oxfordshire Branch

7:30pm – 9pm

Thursday 23rd April 2015

Systems Implementation

What is it?

Why is it important?

What go wrong?

Why is it so difficult?

How to make it successful

What is it?

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'Implementation'

The process of putting a decision or plan into effect; execution.

From Oxford English Dictionaries

'Systems Implementation'

??

'Systems Implementation'

The introduction, deployment or transition of an IT system, function or component into operational service.

Complexity in today's IT systems

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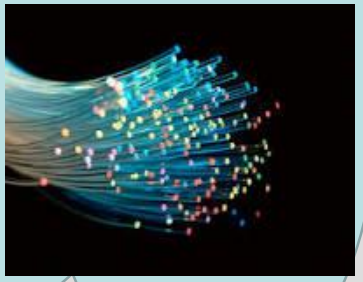
An example:



Complexity in today's IT systems

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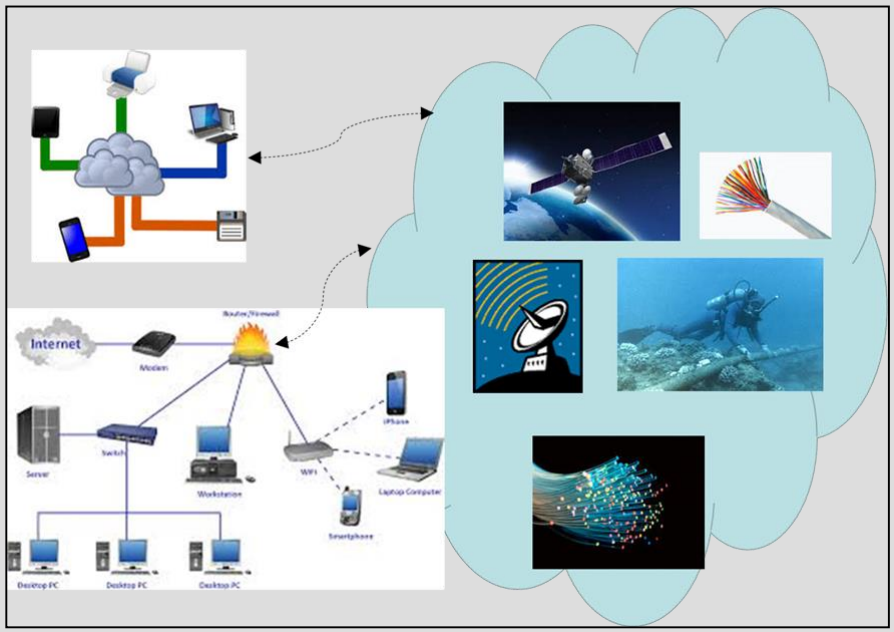

Implementation components

- ***Software***
- ***Hardware***
- ***Data***
- ***Infrastructure***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ***Takes too long/times out***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ***Takes too long/times out***
- ***Not enough space***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ***Takes too long/times out***
- ***Not enough space***
- ***Insufficient security permissions***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ***Takes too long/times out***
- ***Not enough space***
- ***Insufficient security permissions***
- ***Nothing happens – doesn't download, no messages***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ***Takes too long/times out***
- ***Not enough space***
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- ***Nothing happens – doesn't download, no messages***
- ***Mobile phone no longer works properly***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ❑ *Takes too long/times out*
- ❑ *Not enough space*
- ❑ *Insufficient security permissions*
- ❑ *Nothing happens – doesn't download, no messages*
- ❑ *Mobile phone no longer works properly*
- ❑ ***Existing apps no longer work properly***

What can go wrong?

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Downloading an app onto one's mobile phone – what can go wrong?

- ❑ *Takes too long/times out*
- ❑ *Not enough space*
- ❑ *Insufficient security permissions*
- ❑ *Nothing happens – doesn't download, no messages*
- ❑ *Mobile phone no longer works properly*
- ❑ *Existing apps no longer work properly*
- ❑ ***App is too difficult to use, or doesn't work as expected***

What can go wrong?

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Digital Banking

Log in Register

Tell me more

RBS The Royal Bank of Scotland **Here for you**

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- Online services
- Insight and research
- Sector expertise
- Corporate Finance
- Deposits & investments
- Payments
- International
- microsites
- Contact Us
- Careers
-

Important Information for our customers

Common Questions

Collapse

What has happened?

As a result of technical issues that started on 19th June, it is possible that some deposits or payments on your account may have been delayed and/or not included in your balance as reflected on this statement.

RBS website
21st June 2012

What can go wrong?

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The Recorder, 21st June 2012 – 'Tech fault at RBS and Natwest freezes millions of UK bank balances. No fix date available for devastated customers.'

'RBS and Natwest have failed to register inbound payments for up to three days, customers have reported, leaving people unable to pay for bills, travel and even food.'

Wikipedia – 'Completions of new home purchases were delayed, and some people were stranded abroad. Another account holder was threatened with the discontinuation of their life support machine in a Mexican hospital, and one man was held in prison

Computer Weekly, 3rd August 2012 – 'RBS computer problem costs £125m'

What can go wrong?

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The cause of the problem?

A software upgrade was manually corrupted after implementation.

What can go wrong?

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The Telegraph Online **The ten biggest computer failures of 2012.**

‘The failure of security firm G4S to provide sufficient staff to cover the London Olympic Games has been attributed to a computer failure. ***The computer system didn't calculate the correct number of staff required*** to work during the games and as a result the army had to be drafted in to make up the numbers.’

Picture: AFP

What can go wrong?

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ATM's - not working

Blackberry server issues

Airline booking systems

Air Traffic Control systems

Etc., etc.

Why is it so difficult ?

It was never so difficult as it is now, and it will become even more difficult.

Back in 1981…

Why is it so difficult ?

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In 1981…..

e.g. ICL 1900 mainframe

Software programs were written and tested on a magnetic tape.

When ready, the magnetic tape was loaded onto the mainframe and processed. *SIMPLES!*

If you were really lucky, hard disks were used as well.

Why is it so difficult ?

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ICL 1900 mainframe

Me!

Karachi Gas Company
April 1982

Hard disk drive

Why is it so difficult ?

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1 - Complexity of the operational environment

- Interfaces
- 3rd parties
- multiple implementations
- rapid delivery
- platforms
- business operations and continuity
- frequency of changes

Why is it so difficult ?

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1 Complexity of the operational environment

2 Complexity of the system that is to be transitioned

- data
- software
- hardware
- infrastructure
- difficult to test

Why is it so difficult ?

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1 Complexity of the operational environment

2 Complexity of the system that is to be transitioned

3 Complexity of the implementation itself

- Timing and time span
- ‘point of no return’
- checking and testing

Why is it so difficult ?

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1 Complexity of the operational environment

2 Complexity of the system that is to be transitioned

3 Complexity of the implementation itself

4 The number and rate of implementations

- Several implementations per day?
- Emergency fixes and planned releases

Why is it so difficult ?

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1 Complexity of the operational environment

2 Complexity of the system that is to be transitioned

3 Complexity of the implementation itself

4 The number and rate of implementations

5 Experience and skills of implementation resources

Why is it so difficult ?

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Moving customer information from one laptop to another

- *Assume 1,000 customers*
- *Single user of laptop*
- *System unavailable during data transfer*

Copy data to new laptop via

- *Memory stick*
- *External hard drive*
- *The Cloud*
- *Connecting laptops together*
- *Etc.*

Why is it so difficult ?

Moving customer information from one bank's computer to another bank's computer, as part of a merger

Why is it so difficult ?

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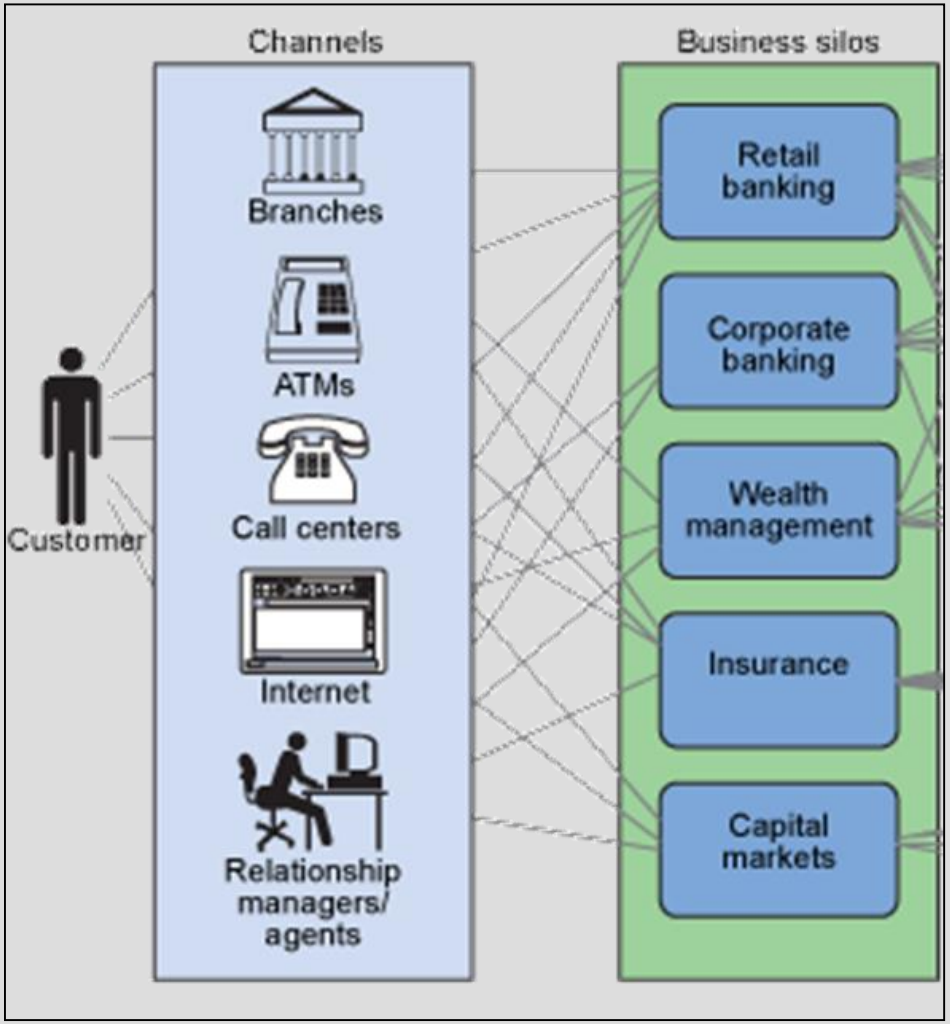
Moving customer information from one bank's computer to another bank's computer, as part of a merger



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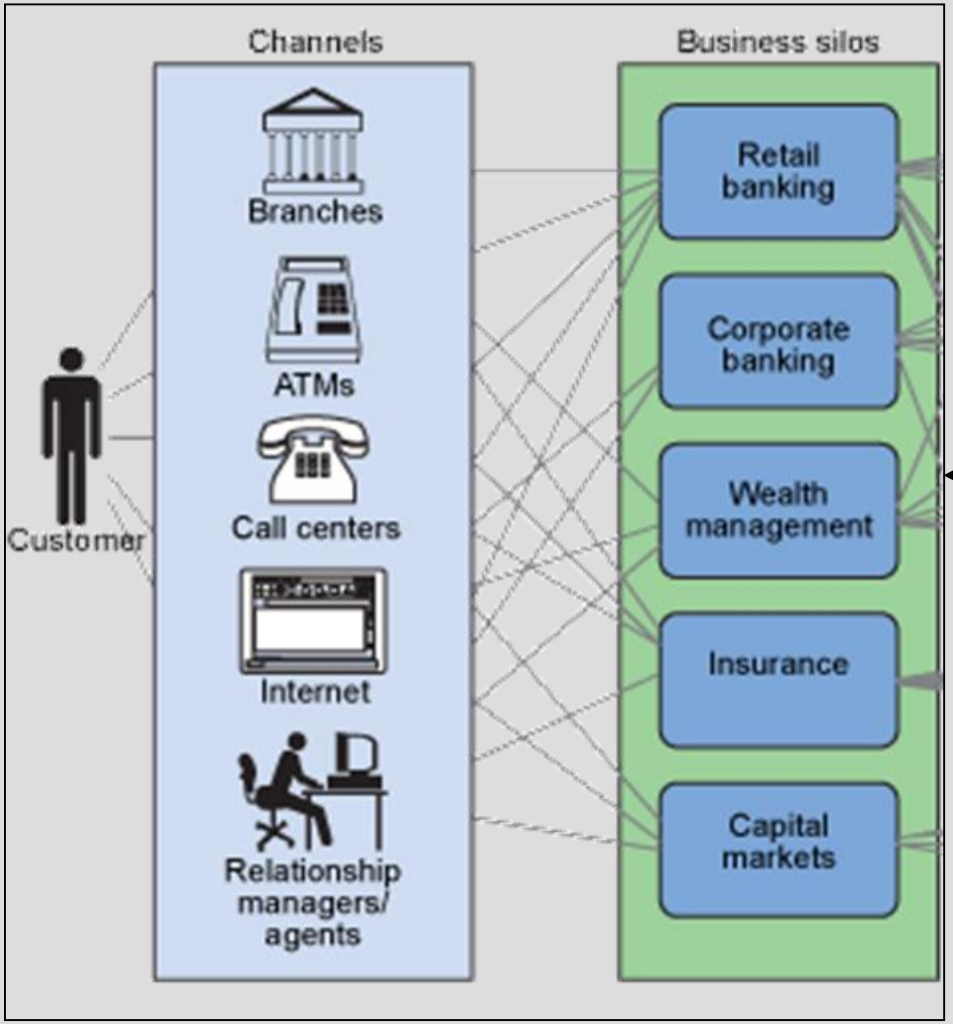

External interfaces

- *Credit card transactions - MasterCard/Visa*
- *Debit cards - LINK/ATMs*
- *Credit reference agencies*
- *Marketing companies*
- *Fraud and Anti Money Laundering*
- *Card production suppliers*
- *Etc.*

Why is it so difficult ?

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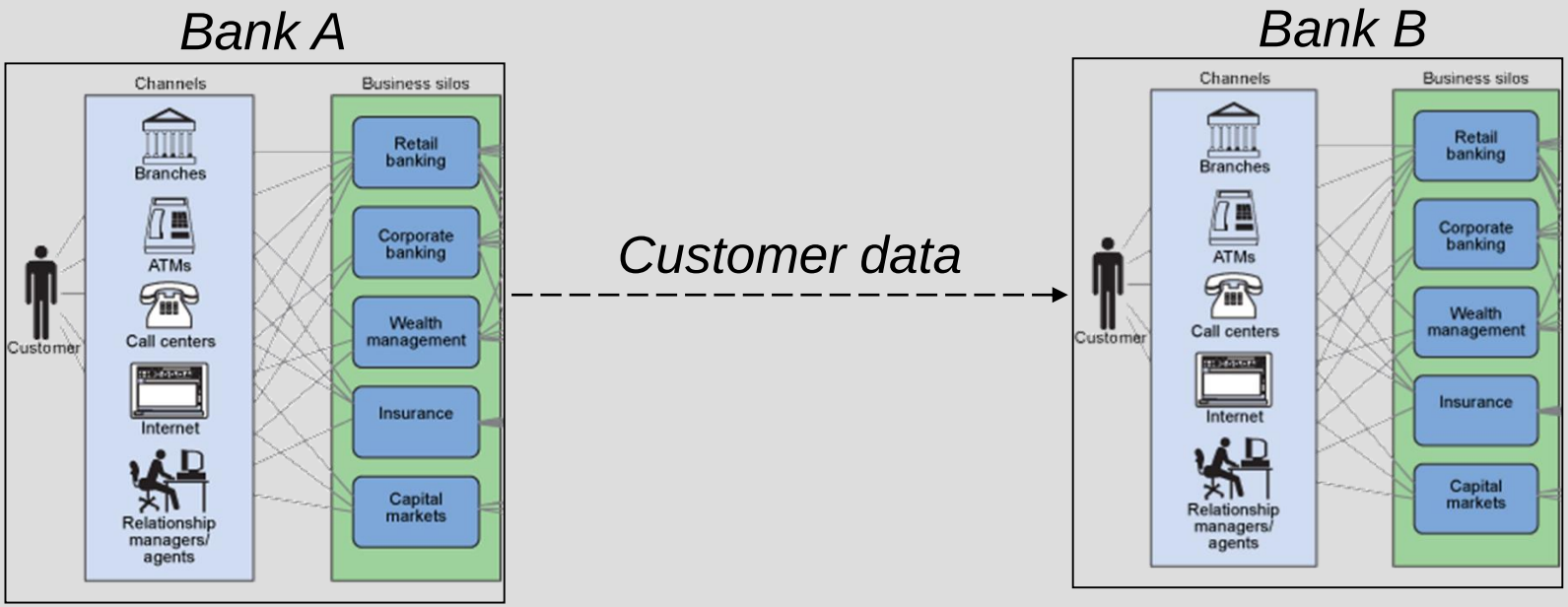

Bank A

- *Assume 30 million customers to be transferred*
- *Banking service must remain available until new system is fully ready*

Bank B

- *Assume 15 million customers already held*
- *Banking service must remain available*

Why is it so difficult ?

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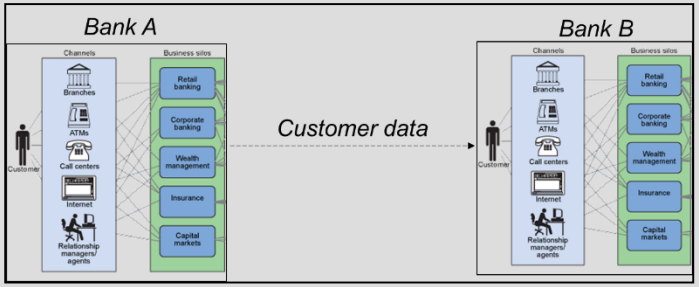
Some challenges



Insufficient capacity on Bank B's systems to hold an additional 30 million customers

– get new data storage devices. And bigger memory. And a faster processor. Get a new mainframe!

Migrate Bank B's systems from the old mainframe to the new mainframe before transferring any data from Bank A.

This requires

- *transfer of old systems to new mainframe,*
- *change software and data to work with the new mainframe,*
- *test, and implement.*

Why is it so difficult ?

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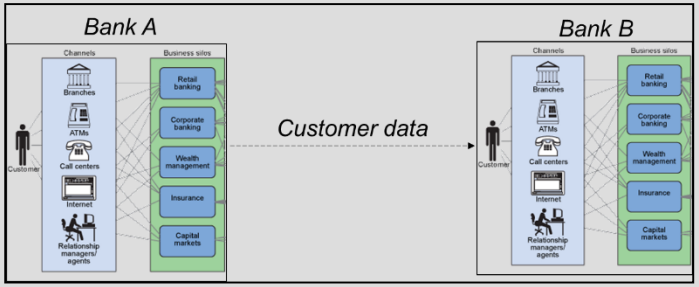
Some challenges



- *Insufficient capacity on Bank B's systems*

Data on Bank A's systems held differently to that on Bank B's systems

– restructure Bank B's data to cater for both Bank A data structures and Bank B data structures.

And redevelop Bank B's software [and test, and implement] to cater for the new structures.

Why is it so difficult ?

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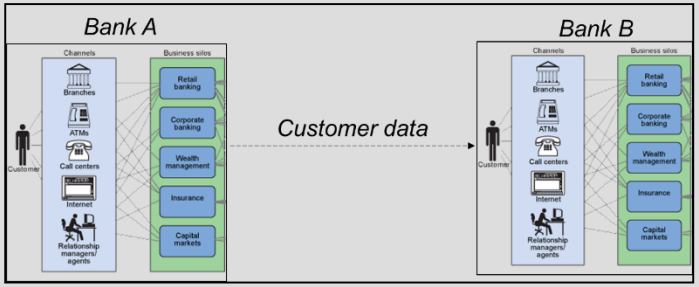
Some challenges



- *Insufficient capacity on Bank B's systems*
- *Data on Bank A's systems held differently to that on Bank B's systems*

Data transfer will take weeks if done in one go, with Bank A data and systems being unavailable.

– split the data into manageable chunks, and transfer piecemeal. Each chunk will require its own data transfer software, and implementation.

But the transferred data will now be on both Bank A and Bank B's systems.

Why is it so difficult ?

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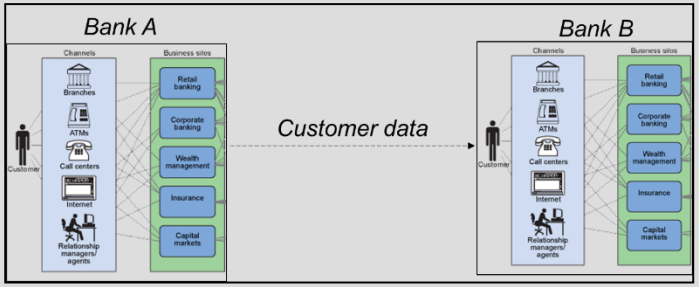
Some challenges



Insufficient capacity on Bank B's systems
Data on Bank A's systems held differently to that on Bank B's systems
Data transfer will take weeks or months

Bank A's data will be updated during and after data transfers

– make any data transferred to Bank B as the master.
And send it back to Bank A for any updates to be applied by Bank A.
And then send it back to Bank B to keep it synchronised.

Create a 2-way link for data transfer between Bank A and Bank B, and create software on both banks to use this link [and test and implement it]

Why is it so difficult ?

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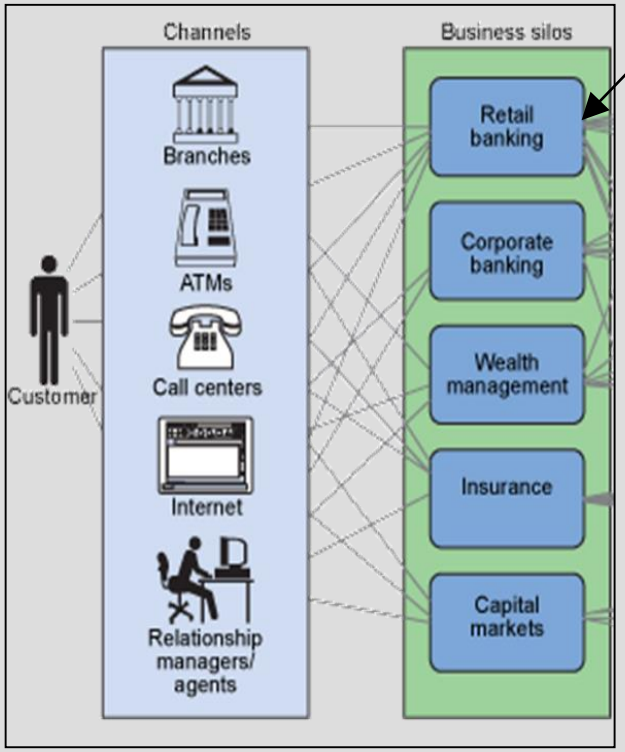
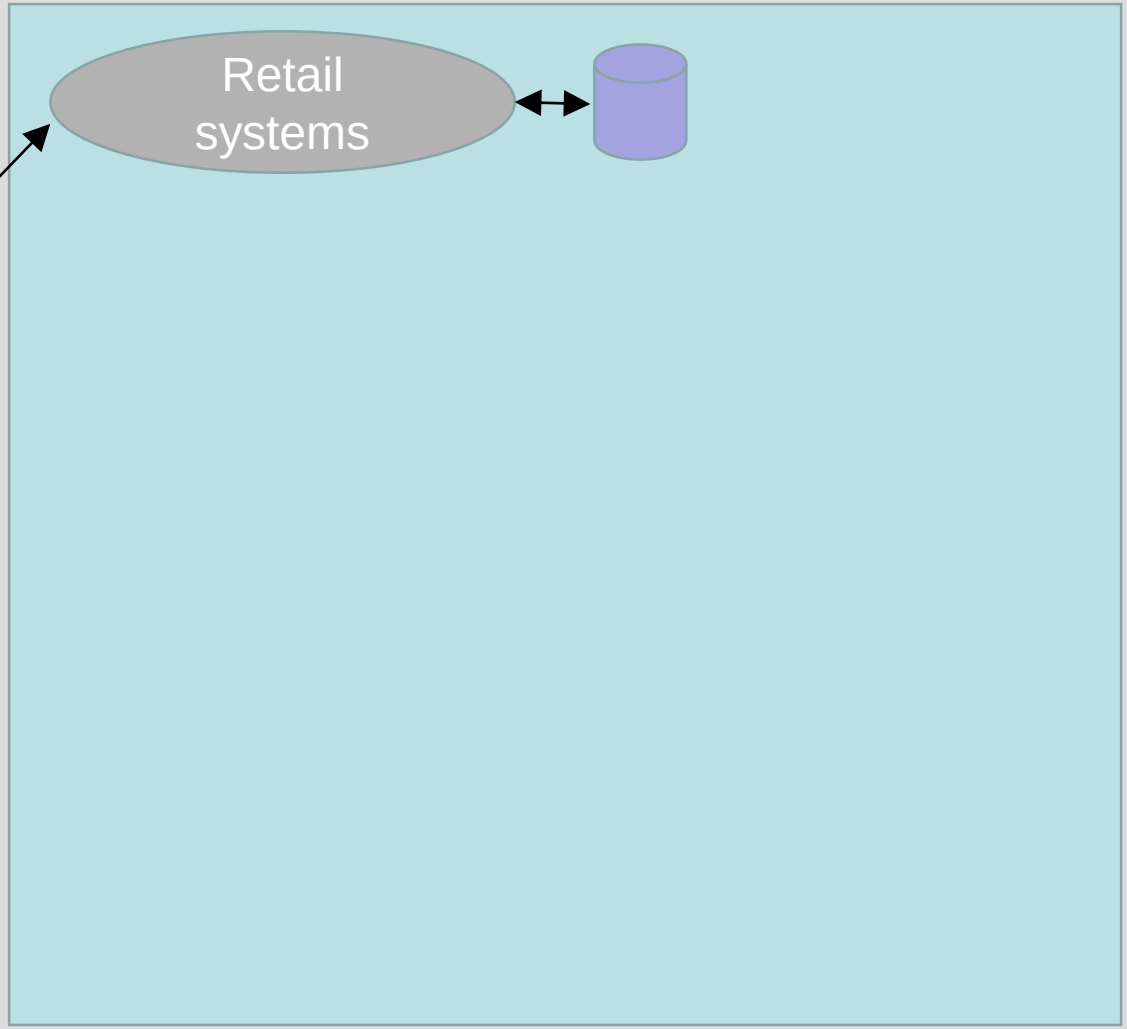
Some further challenges

Bank A's IT systems





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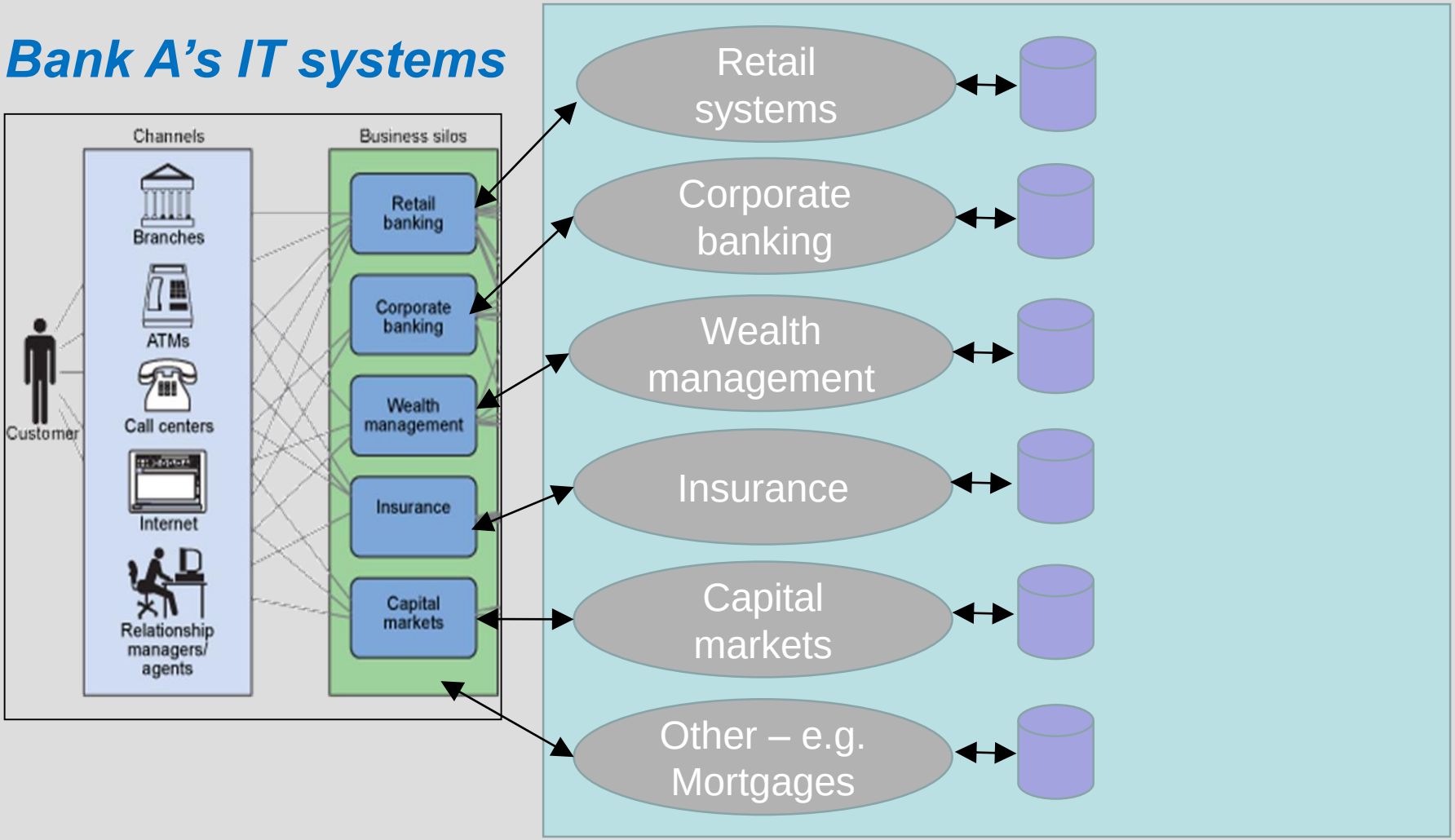

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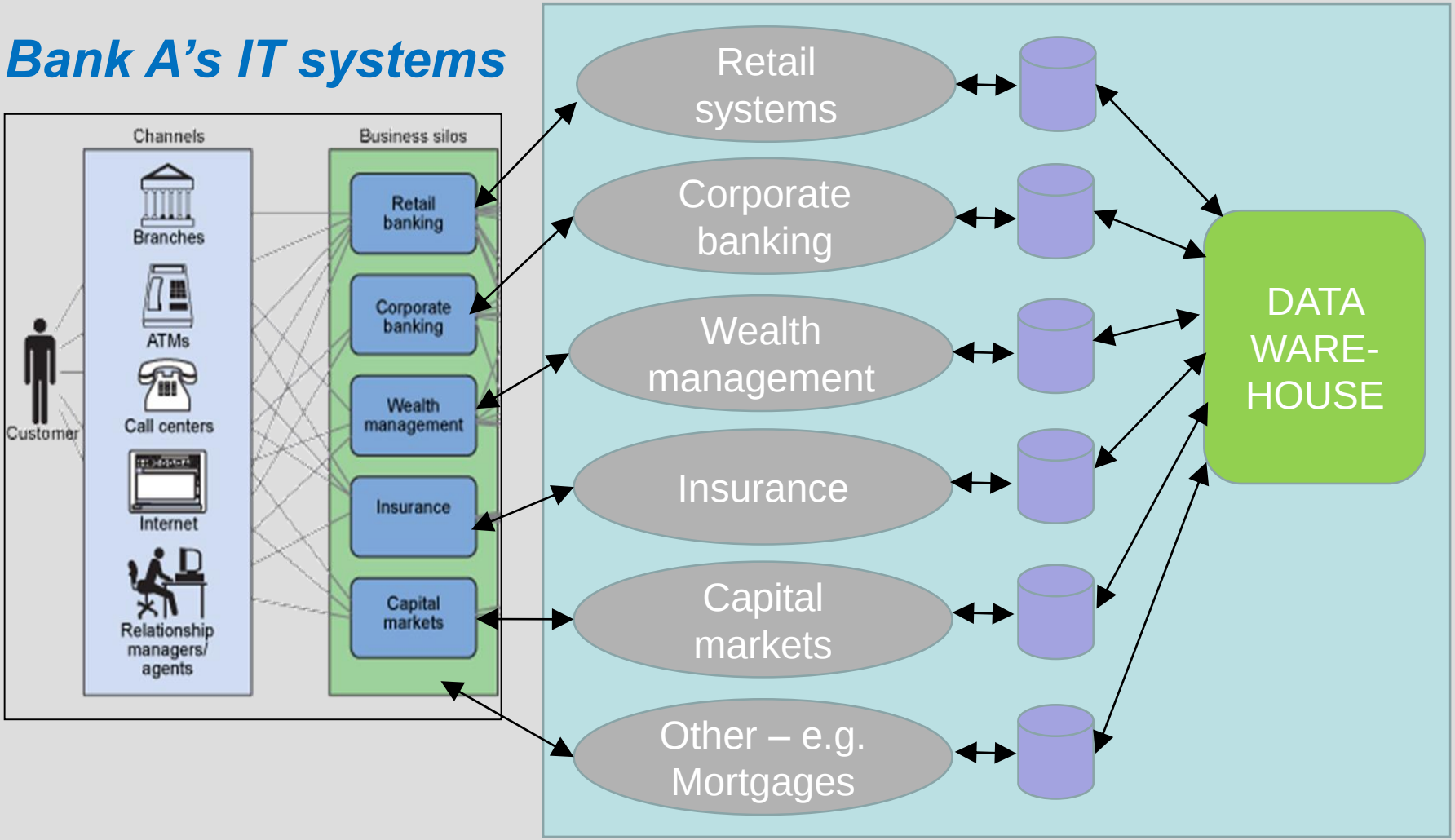

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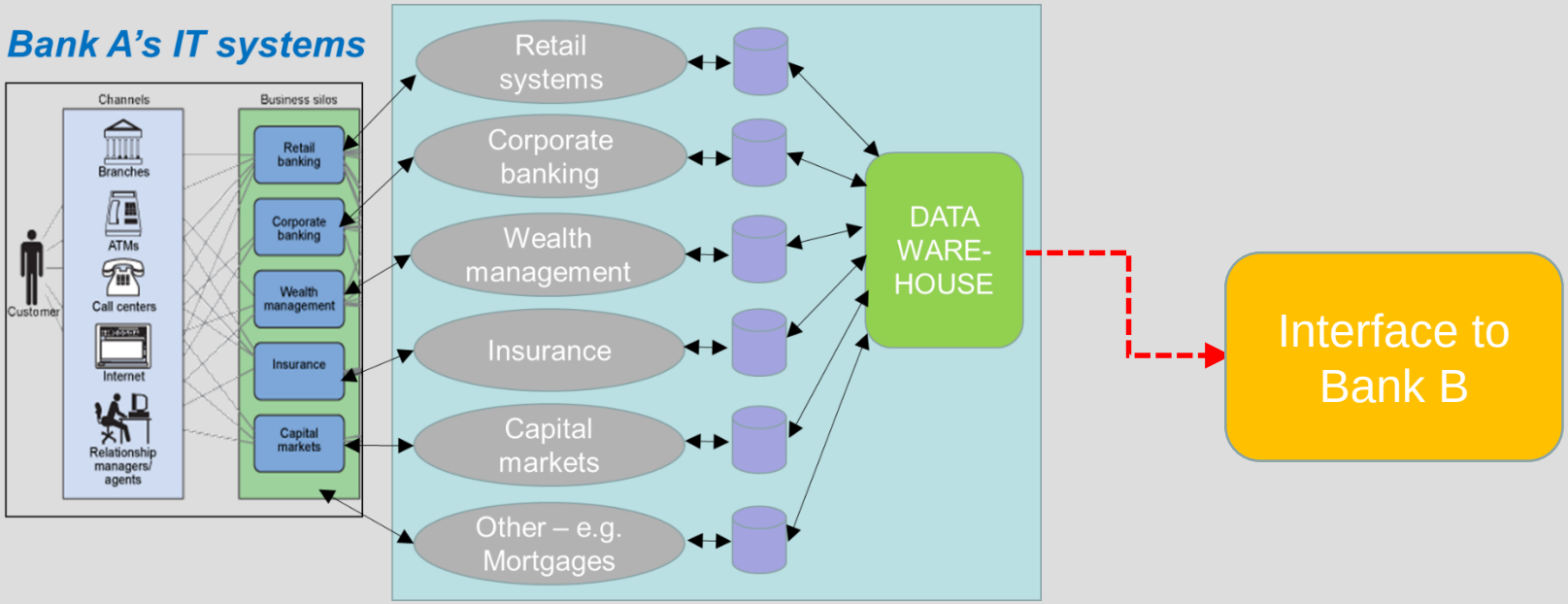

- ***Each channel makes changes to processes and data, mainly independently of other channels***

Why is it so difficult ?

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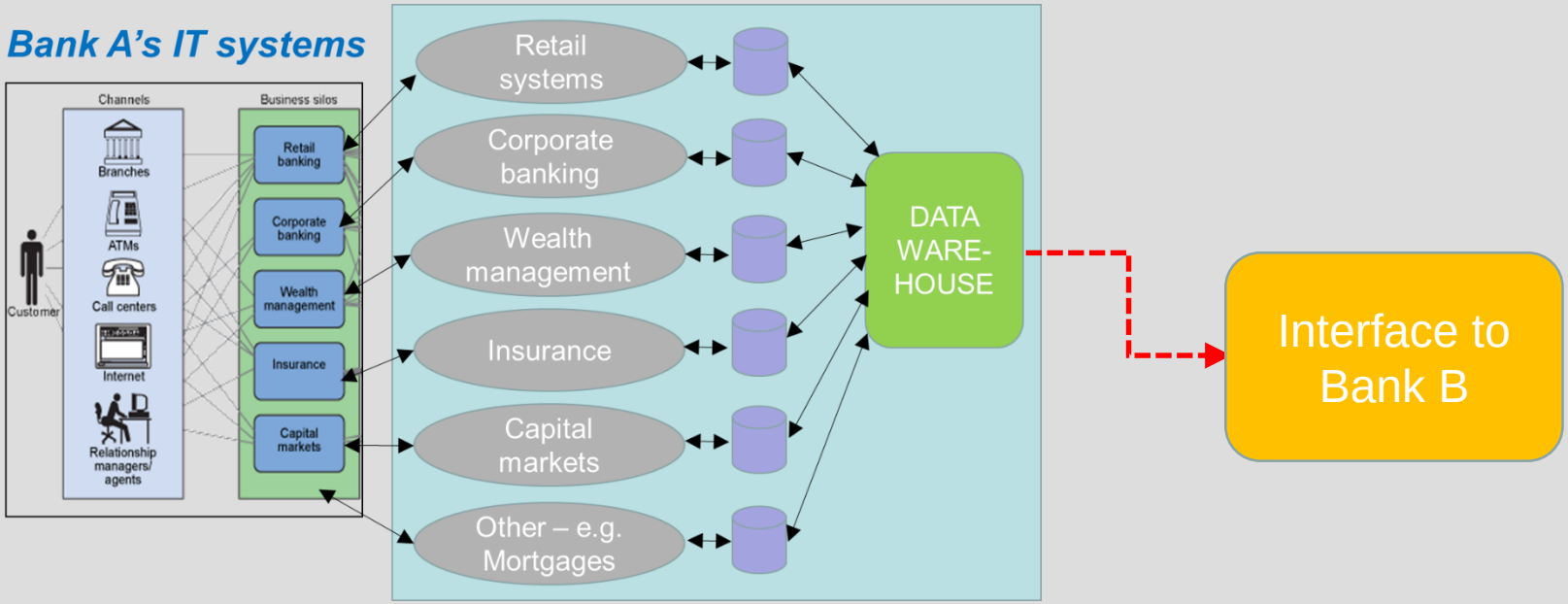
Some further challenges



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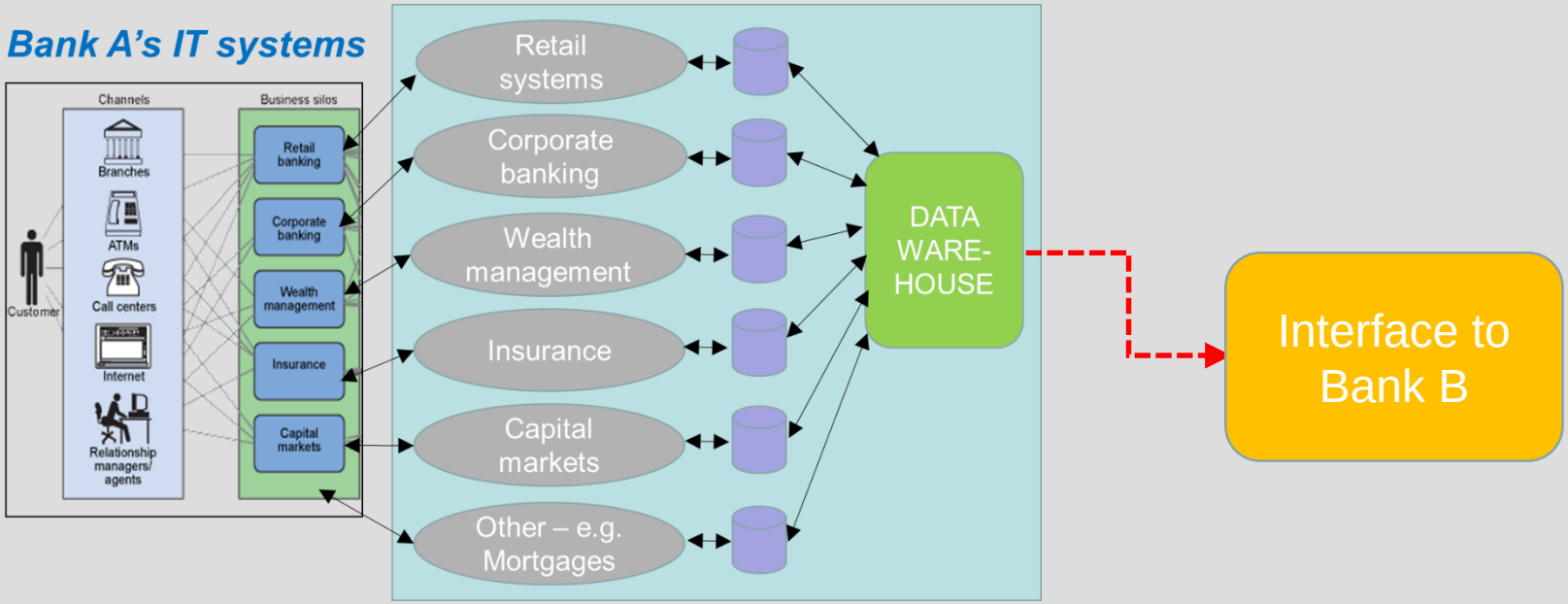

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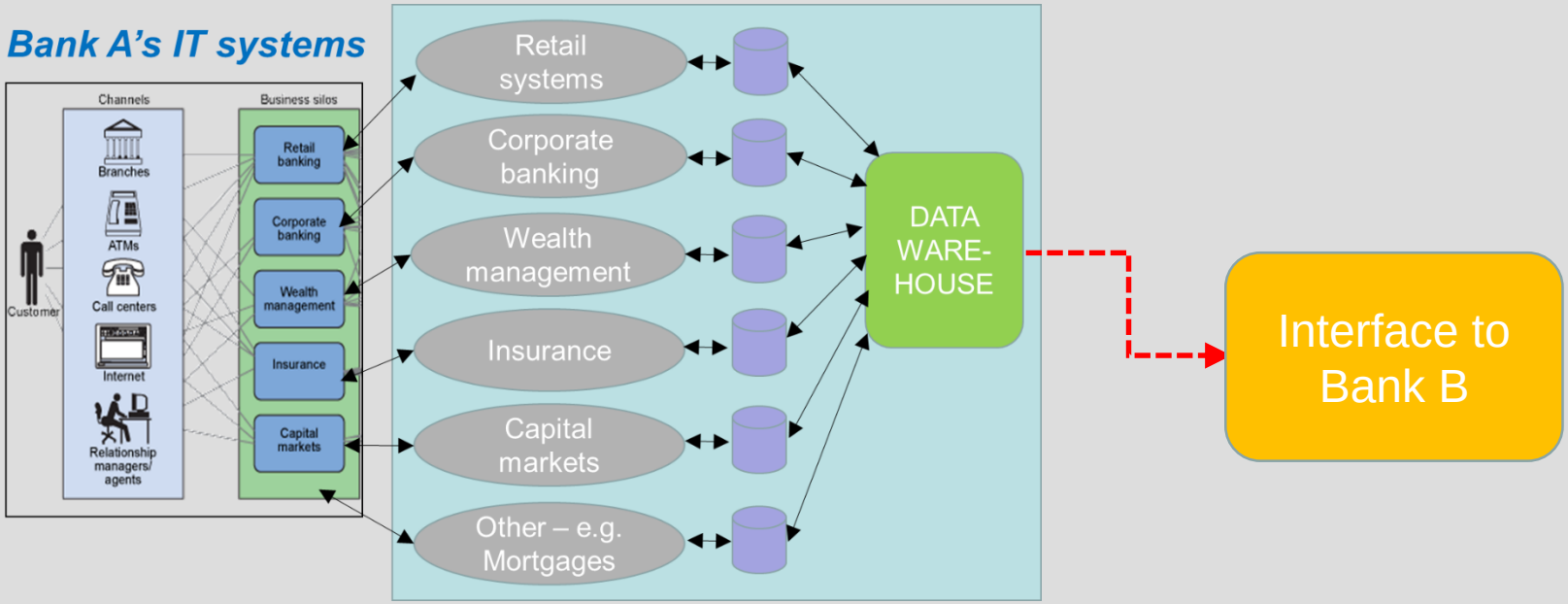

- *Each channel makes changes to processes and data, mainly independently of other channels*
- *Each channel typically has hundreds of sub-systems and databases*
- *Similar data held across channels – which is master?*
- *Data Warehouse receives frequent feeds (several times per day)*

How to make it successful

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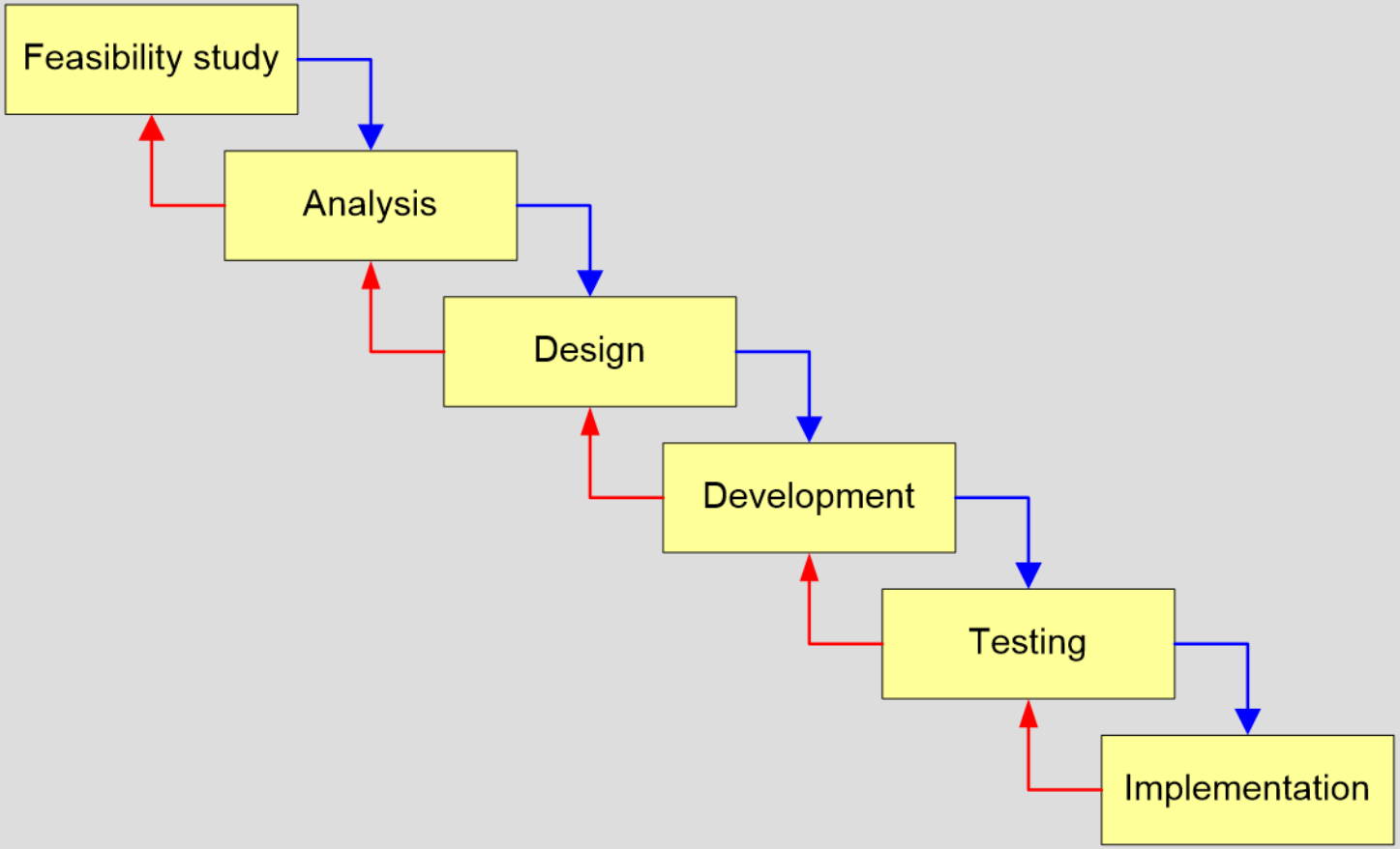
1. ***Prepare and plan for implementation as early as possible. Don't wait until after testing to think about Implementation.***

2. ***Build on lessons learnt from other implementation failures and successes from across the industry. Use the failures as important learning tools, and look for best practice.***

3. ***Carefully control all implementations before, during and after the implementation itself. Check, check and check again. Look at the bigger organisation wide picture of operational changes.***

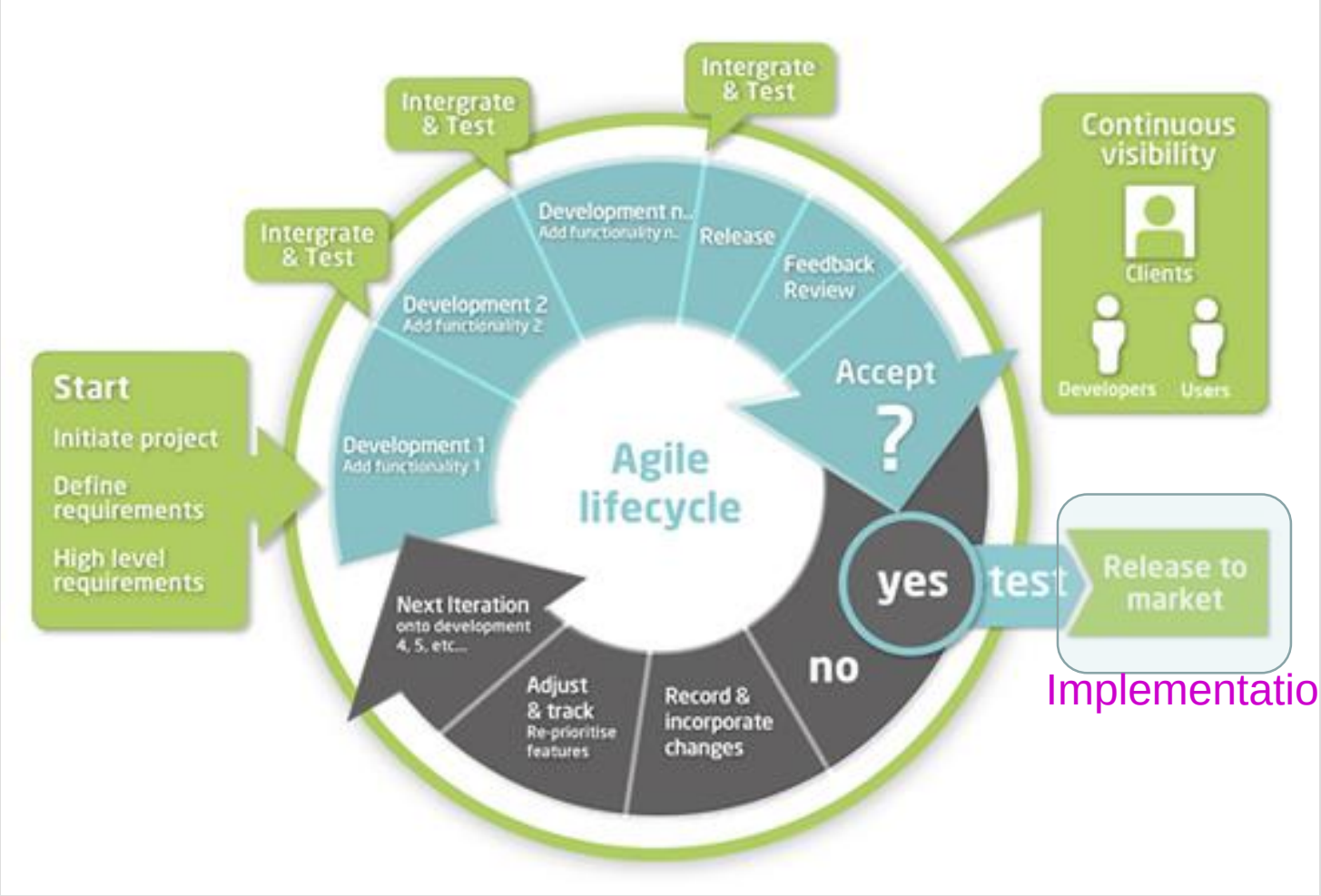
Implementation and the SDLC

Waterfall



Implementation and the SDLC

Agile



Implementation

How to make it successful

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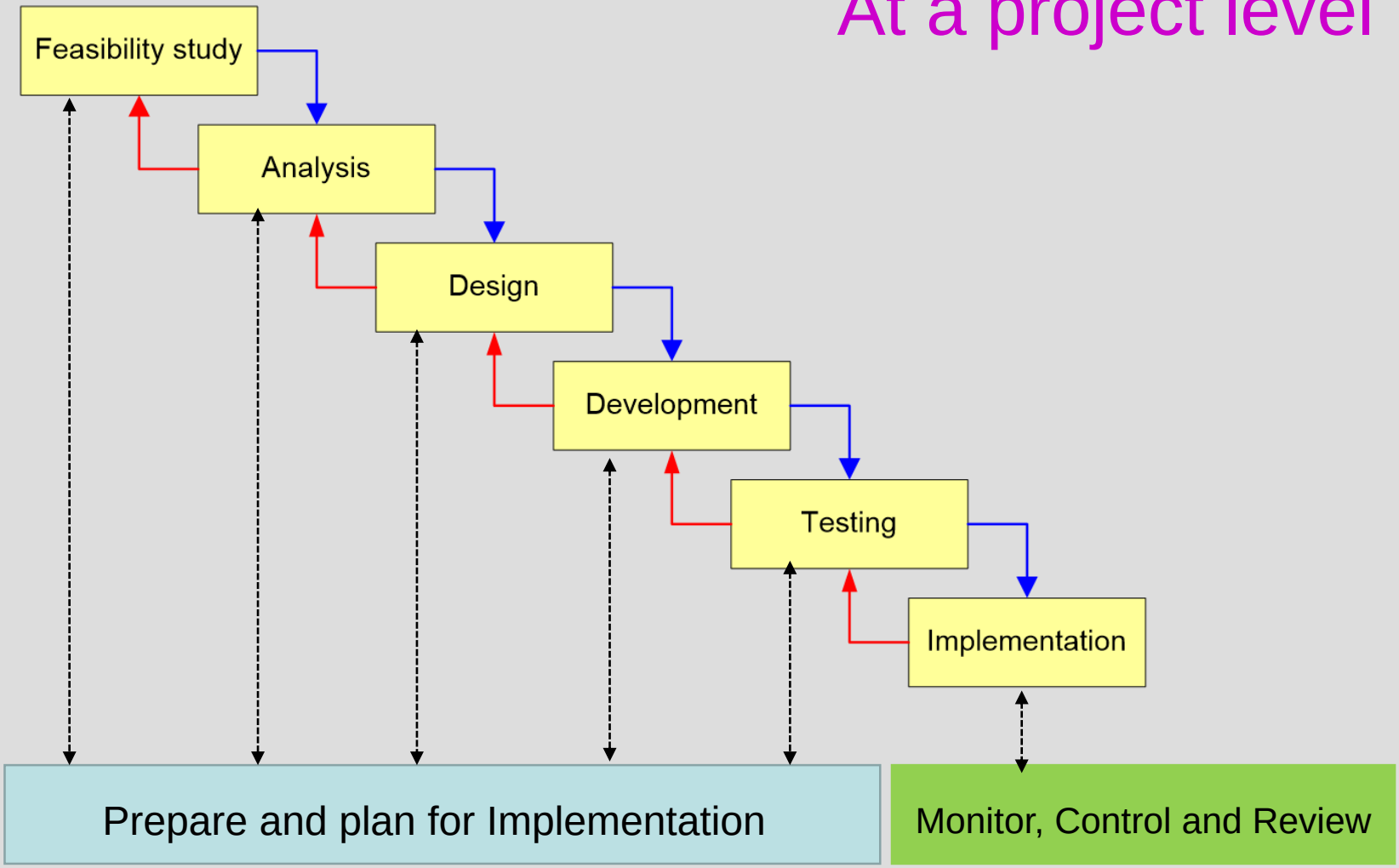
At a project level



How to make it successful

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Prepare and plan for implementation as early as possible

1.Implementation Strategy

- *E.g. Big Bang/Parallel Run/Phased/Pilot*
- *Timing with key business/operational events*

2.Draft Implementation Plan

- *Detailed schedule/timeline of steps, checks, Go/No-gos, escalation procedures, owners, etc.*

3.Test the Implementation Plan

- *Detailed walkthroughs, quality checks, viability, resource availability, etc.*

4.Dress Rehearsals

- *Run the implementation using a separate environment/dummy data*

How to make it successful

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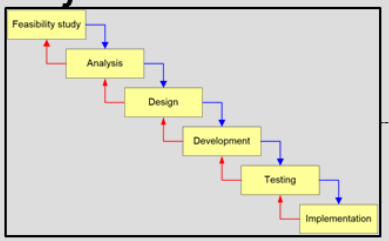
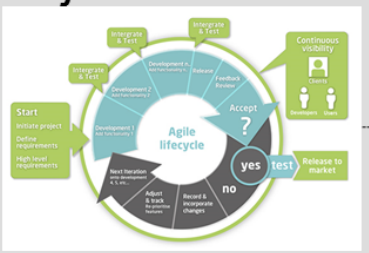
At an organisational level

IMPLEMENTATION GATEWAY

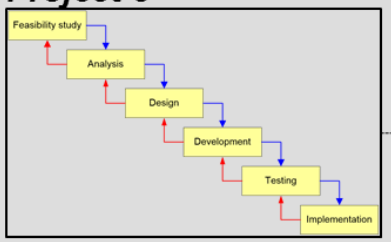
Project 1



Project 2



Project 3



Control and schedule

Clash management

Readiness checks

Project 1
Project 2

Project 3

Operational System

'DEVOPS' – bring together all stakeholders involved in implementation

How to make it successful

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Implementation Gateway - Readiness checks

- Has the testing concluded successfully? E.g. Any outstanding defects? Could these unfixed defects affect other implementations?
- Are the users ready? E.g. Have they had training in the new system?
- Is all documentation in place? E.g. system manuals and incident management procedures updated?
- Are the business personnel ready? E.g. business processes updated and verified.
- Are the operations personnel ready? E.g. Do they know how to make the operational changes to any data, hardware, software, infrastructure, etc. and are these scheduled in, and are the ops staff trained?

How to make it successful

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Implementation Gateway - Readiness checks

- Has the implementation plan been tested successfully? E.g. Any high risk areas?
- Have all resources committed to their availability and actions?
- Are escalation personnel and procedures in place? Who will decide on Go/No-go decisions, what data/reports will support this decision.
- Where are the fall-back points in the Implementation? Has sufficient time been built into the schedule to allow for this?
- At what point will forward-fix be required?
- What happens if the implementation fails to complete successfully? What are the alternative plans, dates, strategy, etc.?

How to make it successful

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The Implementation Manager

bcs The Chartered Institute for IT — Enabling the information society

SFIA Skills Framework for the Information Age

Category	Skill	Code	Level						
			1	2	3	4	5	6	7
Service transition	Service acceptance	SEAC				4	5	6	
	Configuration management	CFMG		2	3	4	5	6	
	Asset management	ASMG				4	5	6	
	Change management	**CHMG**		**2**	**3**	**4**	**5**	**6**	
	Release and deployment	**RELM**			**3**	**4**	**5**	**6**	

CHMG	**Change management**	The management of change to the service infrastructure including service assets, configuration items and associated documentation, be it via request for change (RFC), emergency changes, incidents or problems, providing effective control and treatment of risk to the availability, performance, security and compliance of the business services impacted.
RELM	**Release and deployment**	The management of the processes, systems and functions to package, build, test and deploy changes and updates (which are bounded as “releases”) into a live environment, establishing or continuing the specified Service, to enable controlled and effective handover to Operations and the user community.

How to make it successful

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The Implementation Manager

Co-ordination
Planning
Scheduling
Communication
Attention to detail
Seeing the big picture
Numerate
Problem solving
Crisis management
Technical proficiency

Tenacity
Diplomacy
Doggedness
Persistence
Negotiating
Selling
Good judgement
Self belief
Respectful
Respected

How to make it successful

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Consider the human aspect

- Lots of hard work, preparation, communication, concentration for a prolonged period of time
- High degrees of stress
- IF implementation is successful **=> euphoria**
- IF implementation is unsuccessful
  - sense of failure
  - Immense pressure to complete implementation

How to make it successful

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Regardless of outcome:

After the implementation, there is a period of climb down and re-adjustment back to ”normal” life, both at home and at work. *Management must cater for this.*

In conclusion

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It was never so difficult as it is now, and it will become even more difficult as our organisations and IT systems become ever more complex and varied.

Failures will happen. But we can minimise these by preparing and planning as early as possible, and by monitoring and controlling changes to our operational environments.

In conclusion

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Management for Success

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My books!

- *Co-author on BCS publication – 'Developing Information Systems'*
- *Main author on 'in progress' BCS publication – 'Successful System Implementation'. Due end 2015.*

THANK YOU for listening!