BC 3402
Information Systems in Financial Services

Seminar 2: Impact of IT on Financial Sector

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Impact of IT on Financial Sector

- Macro/ Strategic:
  - Technology and disaggregation of value chain in financial services
  - Shared Services (Financial Sector)
  - Business Outsourcing of Financial Services (IT)
- Micro/ Operational:
  - Retail Operations ~ Internet Banking
  - Trading
  - Settlement & Execution of orders

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THE MACRO ISSUES
OF TECHNOLOGY
IN FINANCIAL SECTOR

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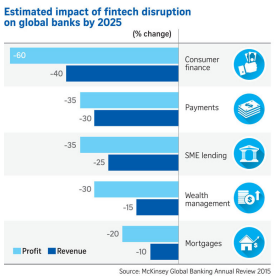
Finance disrupted



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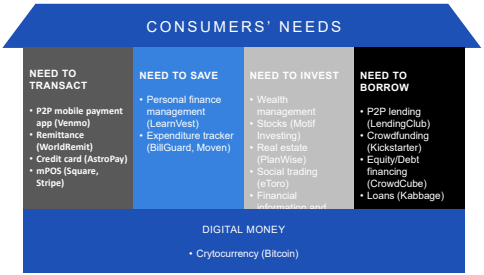
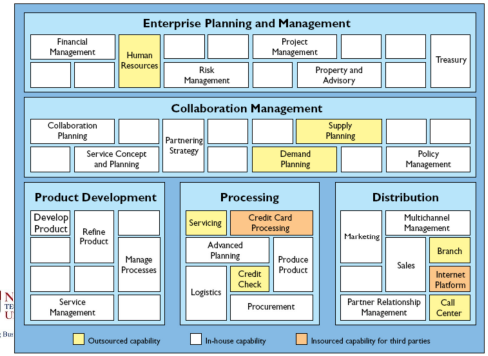
CONSUMERS' NEEDS



Example: Architecture of a Retail Bank



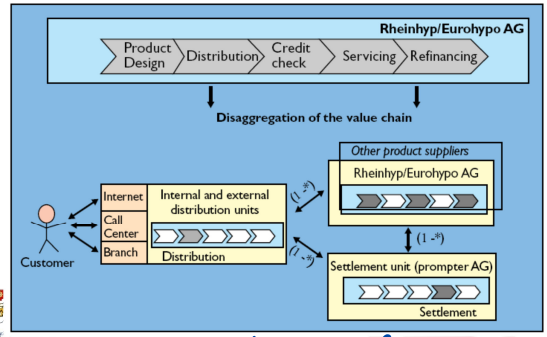
Disaggregation of Value Chain In Banking

- Pressure induced changes in value chains (disaggregation)
  - Cost considerations
  - Consumer experience
  - Agility – react to market changes
  - Improve Efficiency
  - Manage complexity in banking services

Changes in Value Chain

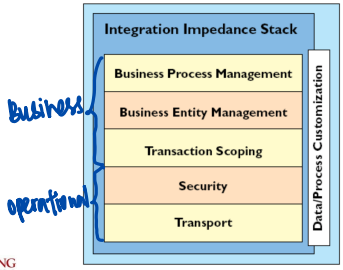
- Decomposition of value chain into specialized entities
- Breaking down traditional process/ roles into new fully functional units
- IT being the enabler: Liken to business process reengineering

Disaggregation



which part can be outsource?

IT and Business Considerations for Value Chain Disaggregation



e.g Act of credit storing

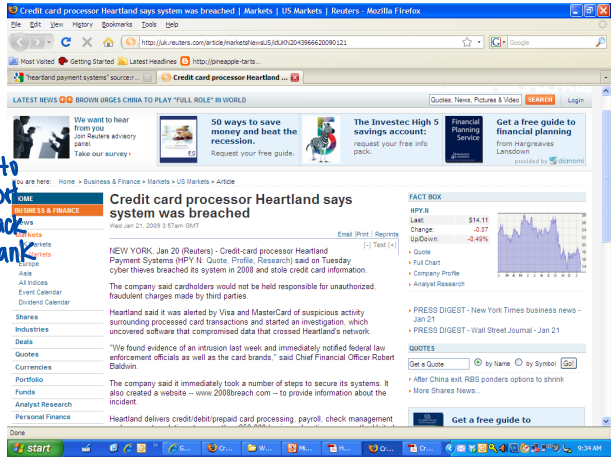
1) can you make it into a business process

2) can you make a business out of this

3) Within this can you specifiy the specific trans

4) How to ensure good security

5) How to transport info back to bank



Which part to outsource?
→ something not critical to value chain might not be true. eg. Texas instru sell rights to Intel

What Are Shared Services?

- Offshoring vs. Outsourcing
- These centralize administrative functions into regional and/or global centers.
- They streamline transaction processing and offer potential for value-added services.
- Finance shared services are best implemented after instance consolidation to single system.
- HR shared services can be challenging on a global basis due to regional differences.

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Shared Services in Financial Sector (Singapore Context)

- Financial Institutions moving their operations to Singapore: e.g. Barclays, Citibank, Credit Suisse, BoAML
- Economic Impact: Engines of growth
- A global city: Staffing for these operations? Labor market constraints and issues?

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Role of Technology in Shared Services

- Technology as an enabler for economies of scale
- Telecommunications advancement
- Types of communication:
  - Phone calls (VOIP)
  - Video conferencing
  - Email

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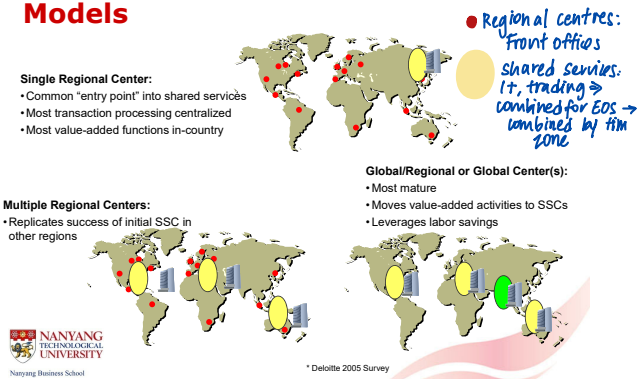
Shared Service Center Deployment Models



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Benefits of Shared Services

- Cost savings
  - Typically 25% to 35% reduction (finance operations)
  - Reduced compliance and audit costs
- Visibility and transparency
  - Systems consolidation
  - Reduced transaction processing times
- Improved governance
  - Comprehensive documentation
  - Clear process owners
- Transformation of administrative functions
  - More focus on value-added activities
  - From transaction processing to strategic advisor

Shared Service Center Challenges

Political

- Internal politics
- No clear sponsor
- History of au ong BUs

Skills and Culture

- Administrative staff mind-set
- No track record in major change programs
- Cost of staff reductio

- Many disparate systems
- Consolidation challenging
- No one wants to give up "their" syst

Main Considerations (Shared Services)

- ✓ Shared services offer significant cost savings for administrative functions, especially finance.
- ✓ Potential intangible benefits exist in improved governance and better visibility of financial information.
- ✓ However, political and cultural challenges can be significant — executive sponsorship is key.
- ✓ BPO is a potential alternative to realize many of the benefits when shared services is challenging.

BPO = Business Process Outsourcing (BPO)

IT Outsourcing (Financial Services)

- IT outsourcing means getting a service provider to do any one or more of the following tasks:
  - Systems development
  - Data centre operations
  - IT infrastructure management
  - or other tasks (data preparation, disaster recovery, etc.)
- IT outsourcing is part of current strategy to be focused on core competence and business to be competitive - it is not just an IT issue

$A = D + E$

Financial Risk $= \frac{D_{(FC)}}{E_{(VC)}}$

Pros of IT Outsourcing

- Focus on core competence
- Fixed costs Vs variable cost → operational Risk $= \frac{FC}{VC}$
- Access to state-of-the-art technology
- Access to required IT capabilities
- Faster implementation
- Freeing capital funds for core business
- Lower operating costs
- Potentially higher quality solutions
- Flexibility
- Better overall IT management

when looking at outsourcing → Need to look into operational leverage.

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Cons of IT Outsourcing

- Loss of control
- Cost savings may not materialise – costs can go up
- Less flexibility – need to depend on contractor
- Being held hostage by contractor
- High cost of switching
- Sub-contracting issue
- Significant impact on IT staff's development and career - loss of opportunity to develop in-house IT competence which may have economic and strategic potential

tell tale signs
> contract agreement tools v. expensive & lock-in - specific & has no residual value

e.g Bell Atlantic contracting AT&T to upgrade phone switch - After that, AT&T charged v. v high cost for maintenance & further upgrades

prevention
- create 'joint venture' → prevent hostage by both sides

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Counterparty risk is the probability that the other party in an investment, credit, or trading transaction may not fulfill its part of the deal and may default on the contractual obligations.

Risk of Outsourcing in Financial Services

- Strategic Risk → e.g credit card best people to earn $ > people who spend alot > people who default on risk
- Reputation Risk
- Compliance Risk
- Operational Risk
- Exit Strategy Risk
- Counterparty Risk
- Country Risk
- Contractual Risk
- Access Risk
- Concentration and Systemic Risk

Balance transfer. (people who want to pay ∴ loan to low interest rate) targeted through

↓

3rd party to call own bank customers to offer balance transfer > Another company used attractive customer profile to price

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one party that handles everything. i.e same point of failure.

Contract risk involves potential losses due to a buyer's inability to pay or the terms of the agreement being broken

Case 1: Outsourcing Risks

In Germany, an increasing number of credit institutions outsource loan handling to specialized, unregulated service providers, called "loan factories". These service providers specialize in back-office services concerning loans and mortgages and, in some cases, decide whether to grant a loan.

In 2003 a credit institution wanted to outsource not only the servicing of loans, but also the decision to grant a loan in standard retail-lending business and in the non-standard business up to € 2.5m. The result of the assessment by the supervisor was that in the non-standard-business the credit institution was unable to monitor and oversee the loans granted by the loan factory. Though the business is run by the credit institution, which bears the risk emerging from it, the decision on granting the loans had been made by the service provider. – Source: Basel Committee Report

Question: By engaging in such business practices, what are the additional risks these institutions are exposed to?

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Shared Services vs. Business Process Outsourcing

The choice depends on a number of factors:

Decision Criteria	Description	Shared Services	BPO
Time to benefit	Significant cost savings <18 months		✓
Degree of customization	Significant customization required	✓	
Brand strength	Potential "logo" client		✓
Scope of processes covered	Broad scope of admin. processes		✓
Economies of scale	Cost savings through consolidating ops.	✓	
Labor arbitrage	Not prepared to use low-cost locations	✓	
Political and cultural barriers	Limited experience of change management		✓
Confidence in BPO providers	Uncertain BPO offerings are proven	✓	
Security and control	Concerns that BPO may weaken controls	✓	

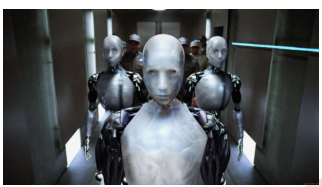
THE OPERATIONAL ASPECTS OF TECHNOLOGY IN FINANCIAL SECTOR

Arbitrrage: the simultaneous buying and selling of securities, currency, or commodities in different markets or in derivative forms in order to take advantage of differing prices for the same asset.

More than one decade ago:

THE MARCH OF THE ROBO-TRADERS (THE ECONOMIST, 15th SEP 2005)

Do you think computer programs can replace human traders?



Robo-Trading/ Algorithm Trading

- More in subsequent lectures
- Definition of algorithm trading: Placing a buy or sell order of a defined quantity into a quantitative model that automatically generates the timing of orders and the size of orders based on goals specified by the parameters and constraints of the algorithm.
- What is it exactly?

Example of Algorithm Trading

- "Sell 100,000 XYZ, Buy 120,000 ABC when price XYZ/ABC >2"
- Rule-based trading
- Made possible by technological advancements and infrastructure established from the 90s onwards
- The FIX Protocol:
  - www.fixprotocol.org (by the former Salomon Brothers)

Benefits of Algorithm Trading

- Effectively facilitate the size and timing of orders based on the trading parameters (e.g. split up large market order flow into smaller ones and time them so as to not move the market)
- Reduce the amount of time of trading:- reduce opportunity cost which is a function of time
- Stealth – mask true trading directions, reduce volatility, stabilizing effect on the market
- Actively seek out trading opportunities (e.g. arbitrage between derivatives and underlying assets)
- Reduce transaction costs

The Rise of Internet Finance

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Digital baking saves on the processes fees in the value chain and offer high interest rate to attract depositors

Contract risk involves potential losses due to a buyer's inability to pay or the terms of the agreement being broken

Internet Banking

- Types of banks:
  - Pure Web banks? Ingdirect, Netbank (failed), Finatiq (Singapore, OCBC)
  - Bricks and Clicks? – Mostly all others
- Very high failure rate of pure web banks
  - Case of Iceland?
- Operating cost of running a bank
  - What are the activities that are supported for retail banking?
  - How often do you use these activities?

Success in Internet Banking

- Understanding Transactional Banking vs. Relationship banking
- Transactional banking
  - Can be supplemented by technology e.g. credit rating or scores e.g. personal line of credit, credit cards, car loans (US context)
- Relationship banking
  - Idiosyncrasies in the credit review process – "I know it when I see it" e.g. SME banking, Agriculture loans, Housing mortgage
- The underlying business model of the bank dictates the extent of which web banking is be implemented

Success in Internet Banking (Cont'd)

- The role of Government Insurance (FDIC, SDIC)
- The need to attract deposits: Asset Mgt. vs. Liability Mgt.
- Internet banking increase the reach of the banks to potentially large number of consumers without the overhead costs
- Example: INGDIRECT
  - How can one deposit or withdraw $ into a bank that does not have any physical branch?
  - How can one open an account without face-to-face interaction?

Risk Mgt. Principles of E-banking: Board and Management Oversight

- Effective management oversight of e-banking activities
- Establishment of a comprehensive security control process
- Comprehensive due diligence and management oversight process for outsourcing relationships and other third-party dependencies

Risk Mgt. Principles of E-banking: Security Controls

- Authentication of e-banking customers
- Non-repudiation and accountability for e-banking transactions.
- Appropriate measures to ensure segregation of duties
- Proper authorization controls within e-banking systems, databases and applications
- Data integrity of e-banking transactions, records, and information
- Establishment of clear audit trails for e-banking transactions
- Confidentiality of key bank information

Risk Mgt. Principles of E-banking: Legal and Reputation Risk Management

- Appropriate disclosures for e-banking services
- Privacy of customer information
- Capacity, business continuity and contingency planning to ensure availability of e-banking systems and services
- Incident response planning

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Summary

- Looked at the impact of IT on Financial Sector
- "Macro" aspect
  - Changes in value change of banking due to IT
  - Shared Services "Phenomenon"
  - Outsourcing in banking
- "Micro"/ Operational aspects
  - Algorithm trading (Robo traders)
  - Web banking

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