Phase 1

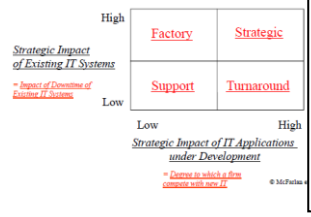
Competitive advantage:

	Lower Cost	Differentiation
Broad Target	Cost Leadership	Differentiation
Narrow Target	Cost Focus	Differentiation Focus

Porter's 5 Forces:

1. **Rivalry** – market slow, product lack differentiation
2. **Potential Entrants** – low w/ barrier to entry
3. **Substitute Products** - $ subs low or low switching costs
4. **Suppliers** – power high when few companies, differentiated
5. **Buyers** – power high when undifferentiated

IT Strategic Grid



Strategic: IT essential for executing current strategies and operations. Apps under development crucial to future competitive success

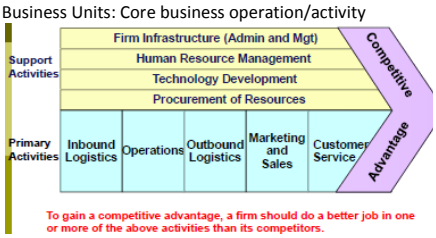
Value Proposition – how product/service fulfills needs of customers (primary source of competitive advantage) (attract customers/why instead of rival/what is provided that other firms do not?) (Personalization/customization/reduction search costs/facilitation of transactions)

Revenue Model

- Advertising – fee from advertisers in exchange for advertisements
- Subscription – fee from subscribers for access to content/services
- Transaction fee – commissions for enabling/executing transaction
- Sales – sales of goods, info, services

Phase 2

Business Units: Core business operation/activity



Value Chain Model – organizes components of business
Primary – directly related to production/distribution
Support – make delivery of primary possible

Phase 3

Databases – store/manage data efficiently in electronic storage device.
- Help search for data, tell you info about data, link pieces of data together

Database Management Systems (DBMS) - organized collection of logically related data
- uses special database management software to reduce data redundancy, share data in controlled way, reduce data inconsistency problems
- Users have to deal with application specific requirements

Customer Relationship Management (CRM) – customer centered business strategy
- IT enables firms to collect, maintain, analyze large amount of customer data
- develop stronger relationships w/ customers, optimizing interactions, better understanding of needs and behaviours
- *Operational* – front office CRM, direct customer contact, gather share use data to improve interactions
- *Analytical* – use data warehousing technologies & business intelligence to get info customer behaviour
- Analytical techniques – data mining

Phase 4

Levels of Decision Making

- **Strategic** – long-term objectives, allocate resources - EIS
- **Management control** – monitor work, make adjustments – MIS/DSS
- **Operational** – how to carry out day-to-day tasks - TPS

Transaction Processing Systems (TPS) – processes reg. business transactions
- record routine transactions, simple processing, give info to other IS

Management Info Systems (MIS) – use data from operational systems to provide info for decision making
- produces summary reports,

Decision Support Systems (DSS) – computerized support to the decision making process
- Interactive, provides decision analysis capability, tries to anticipate the future

Executive Support Systems (ESS) – high-level decision making
- provides flexible delivery of into to senior executives
- produces summaries, trends, projections

Data warehouses – logical collection of info – from many operational databases – supports business analysis activities
- **OLTP** (online transaction processing) – gathering input info, processing, updating existing info (operational database)
- **OLAP** (online analytical processing) – manipulation of info to support decision making (data warehouse)

Business Intelligence – too much data not enough info
- analyzes business info – provides info about past, monitors current operations, predicts and forecasts future (includes data mining, OLAP, forecasts)

Data Mining – automatically analyzes large volumes of data to find patterns, trends, relationships
- Correlation does not equal causation – results only as useful as data being mined

Text Mining – analyzes documents to create high quality info about business

Phase 5

RFID, E-commerce, Recommendation Agents

Phase 6

System Development Life Cycle (SDLC) – consists of phases followed methodically

1. Planning – determine project goals, feasibility test
2. Analysis – business requirements (end users & IT specialists)
3. Design – features and operations, equipment needed
4. Development – transform into actual system
5. Testing – works and meets requirements
6. Implementation – distribute to workers
7. Maintenance

Feasibility

- **Technical** – is there technology to create the system we want? What do I need the technology to do? If it doesn't exist can I make it? Strengths & weaknesses
- **Economic** – will system's benefits outweigh its costs? What are benefits, savings, costs?
- **Operational** - will system be used appropriately by intended users? How will you implement the technology? How will users react to the technology? How much will the implementation change the business?

Non-Technical

- trust, privacy issues, channel conflict (production sells directly to consumers), getting people to use tech

RFID

- automatic identification (uses radio waves to identify bulk or individual items)
- RFID tag sends out data and a scanner that reads data presents it to humans or computer (comprised of tag, reader, necessary supporting infrastructure)
- tags can be used to identify and track packages, animals, clothing, people
- data can be fed into other databases and apps for further processing

Benefits: tags do not need line-of-sight for reading; Assists SCM (makes more efficient); Ensures product integrity; ID, travel, ticketing (genuine documents); patient care and management (medical records to prevent errors); enables customer-specific marketing by tracking purchases

Risks: PRIVACY: silent and no line-of-sight needed, consumers won't know if and when they are "tagged"; tags can be embedded into any object without knowledge of individual who obtains them; can track individual's movement (political rallies/protests); profiling of individuals (creation of global item registration system where every physical object identified and linked to owner at point of sale – purchasing habits easily created); profiles with personal info (medical records) impact insurance/employment
- Implementation requires massive databases containing unique tag data incl. links to personal identifying data [costly]

Phase 7

Functional Requirements

- **process-oriented** – process performed by system (the system must allow users to search through their credit history)
- **information-oriented** – info that system must obtain (the system must have info on students)

Non-Functional Requirements

- **Operational** – physical & technical environment of system (the website should be viewable on smart phones)
- **Performance** – speed, capacity, reliability of system (the page should take no more than 2 seconds to load)
- **Security** – authority and access (only platinum users should be able to see the catalogue)
- **Cultural, political, legal** – (system's data gathering should comply with privacy laws)

E-Commerce

- distribute, buy, sell goods/services and transfer of funds online through electronic communications

Benefits:

- *Personalization*: matching services, products, advertising to individual's needs

→ get info directly from users, observe online actions, build from previous purchase patterns, make inferences from other similar people, collaborative filtering
- *Disintermediation*: using internet to bypass intermediaries in distribution channels, producer directly to supplier, **save costs** (commissions airlines)
- *Global Reach:* extend products/services to customers anywhere there is internet connection at lower cost (anywhere anytime)

Risks:

- delivery of product depends on mail (out of control)
- mall has social aspect to it that internet can not replicate
- hard to get traffic to your website
- authentication, fraud and misinterpretation (of other companies), need customer trust
- privacy and protection of info (credit card, mailing address)

Access

[enter __] if certain entered by user. → "___" to give result.
Date: <#1/1/1990# Sort: ascending/descending Criteria: sum, max, min, avg
Group By – 1 genre to many artists, 1 artist to many tracks, track rating focus. 1 publisher to many comics. *If there is one to many, need to group by to get end result/focus.*

Phase 8

Insourcing – IT specialists within organization
- organization has control over resources required, IT people know the industry and company, project team's goals aligned with company's goals

Outsourcing – outsource development of system OR just most of IT functions
- Benefits: Strategic: simplifies management agenda, cost cutting efforts/downsizing, no need to recruit and retain competent IT staff. Financial: avoid heavy investment so costs go to other uses, improve cash flow and cost accountability. IT: get expertise not available internally, provide superior infrastructure, guaranteed IT service level.
- Risks: loss of competitive advantage, loss of control over IS function, few outsourcers capable of taking large contracts, outsourcers unfamiliar with customer's identity, "poaching" by outsourcer [shares your tech at lower cost with rival]

Ethics – questions of right or wrong

Privacy – right to be left alone
- Privacy policy to inform customers and provide opp. to opt out

Security – info is capital/competitive advantage – must be protected
- Defence: People – train/educate employees about passwords
- Security plan: develop info security policies, communicate info security policies, identify critical info assets and risks, test and re-evaluate risks, obtain stakeholder support
- technology – authentication and authorization: digital signatures and biometrics; prevention and resistance: content filtering, encryption, firewalls; detection and response: antivirus, anti-phishing software

Recommendation Agents (RAs)

- info filtering system that attempts to recommend info items that will be of interest to user
- software that elicits consumers' product preferences and makes recommendations accordingly
- provides personalized and ranked lists of items based on user's history, preferences, constraints
- collaborative filtering – behaviour of a lot of people can be used to predict behaviour of individual
- gathers explicit (scales/lists answered by user) and implicit (inferred through analysis) data
- uses data similar and not similar collected from others

Benefits: Narrows down large number of products available online to assist consumers in choosing "right" product (efficient); 1/3 customers who notice recommendations buy based on them, helps company earn extra revenue.

Risks: ethics – RAs work solely off data with no social context, could make recommendations offensive to consumers (Planet of Apes/Martin Luther King); collaborative filtering works only as well as data available, and humans produce low-quality noisy data (not consistent, ratings depend on mood and external factors in environment); keep consumers in a rut – recommend what user is currently interested in, inhibiting discovery of new interests.