

Week 3  
IT Strategy

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ACS-3801-050 Principles in Information Systems

Fall 2020

# Week 3 Outline

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- Reading: Chapter 12, ICT Strategy, p395 – p426
- IT Strategy
  - Planning Objectives
  - Overview of Strategy
  - Normative Approach to Developing Alignment and IT Strategy
  - IT Strategy and Alignment Challenges

# Learning Objectives

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- Understand the importance of an IT Strategy
- Review the components of the IT Strategic Plan
- Understand the processes for developing and IT Strategy
- Be able to discuss the challenges of developing an IT Strategy
- Describe the Gartner Hype Cycle recognizing the wide range of emerging technologies at various levels of maturity

# Introduction

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- Investments into IT technology is intended to create value to the business, reduce costs, improved services, products etc.
- IT Alignment is important to ensure these investments support the overall business strategy
- The goals (objectives) of the strategy must be reflected in the investment in IT
- Misalignment of objectives and technology will not benefit the organisation even if the implementation is done successfully

# IT Planning Objectives

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- Ensure IT plans and activities align with the plans and activities of the organisation
- Comprehensiveness, all aspects of the strategy have related IT components IF required
- Identify non-IT organisational initiatives needed to ensure maximum cohesion of strategy and IT (BPM)
- Ensure that the organisation has not missed an opportunity (new tech, ideas, processes improvement)
- Develop the tactical plan that realises the objectives, endorses projects, services and business transformation
- Communication, inform the organisation of initiatives and change
- Political, ensure that a political process is in place to support the IT Strategy

# Outline IT Plan

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## Goal

## IT Initiatives

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Research and education

Research patient data registry  
Genetics and genomics platform  
Grants Management

Patient Care: Quality Improvement

Quality measurements databases  
Order Entry  
Electronic Health Record

Patient Care: sharing data across the system

Enterprise master person index  
Clinical data repository  
Common Infrastructure

Patient Care: Non-Acute Services

Nursing documentation  
Transition of Care

Financial Stability

Revenue system enhancements  
Payroll-personnel system  
Cost accounting

# The IT Plan

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- We have a plan!
- But it will change over time as micro and macro business changes occur
- Very high level view, each initiative has its own list of sub-activities and services it needs (dependencies)
- These dependencies will also need to be detailed
- Very difficult to define and manage

# Overview of Strategy

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- Formulation
- Implementation
- Vectors for Arriving at IT Strategy



# Formulation

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- Decision making about goals and objects and the activities needed to meet
  - The mission statement provide high level of patient care (very open mission!)
  - Goal – reduce costs
  - Service consolidation and realignment
  - Identify isolated services transition to standard service

# Formulation

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- The mission statement creates a tree of related goal, objectives and initiatives needed
- Generally one initiative will not realise a business mission statement
- Executive management has to rationalise the initiative options and select those that fit the mission
- May create conflict over the differing values
- IT Strategy Formulation is now based on the initiatives identified by senior management and how to implement/change/improve services

# Implementation

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- The act and process of realising initiatives
  - People
  - Technology
  - Skills
  - Processes
  - Services
- Example: Clinical Research Data warehouse
  - Research skills
  - Analytics Tools
  - Data base services
  - Network technology
  - Data extract. Transform, Load services
  - Contracting services (for guidance and implementation services)

Does not discuss the project approach being used!

# Vectors for Arriving at IT Strategy

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- A Vector: approach, choice of perspectives that are used to create the plan for IT investment
- Strategy based on combination of 4 Vectors
  - Organisational Strategies
  - Continuous improvement of core process and information management
  - Examination of the role of new information technologies
  - Assessment of strategic trajectories

# Derived from Organisational Strategies

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- When the organisation has set its long term strategy
- i.e. identified its opportunities it then looks at the different applications and services that that will help achieve this goal
  - Reduce Patient (Customer) Wait Times (at POC)
  - What applications and services can help with this?
  - Better scheduling services
  - On-line capability
- “How do we achieve the object using IT”?

# Continuously Improve Core processes and Information Management

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- All organisations have core services (essential) that allow it to operate.
- In clinical sites this could be specific clinical services like ENT (Ear, Nose); Maternity units; Cardiac Sciences, General Hospital, Radiology, Physio etc.
- Strategy is focussed on these core services and improvement, therefore IT strategy focusses on monitoring, measuring and improving
- Kaizen, Business Process Mapping and improvements
- Current state vs Future state

# Continuously Improve Core processes and Information Management

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- A Cancer Care unit at a facility has determined that if a patient is diagnosed with cancer and receives treatment within 60 days they have a higher recovery rate
- Presently this time is currently 67.25 days
- Analysis requires that the process of diagnosis is a major contributor to the gap (7.25)
- Therefore the agreement is to focus on using IT to reduce that gap using real-time messaging, telecom instead of mail, integration of results into patient record instead of manual input

# IT Strategies that rely on New IT Capabilities

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- How can new technology be applied, not necessarily clinical apps, but services that can deliver the applications and clinical services
- E.g. Telemedicine, video conferencing, secure messaging
- New research and analytics tools, Big Data, real-time analysis Cloud Services
- New clinical devices and testing equipment



# IT Strategies Based on Assessment of Strategic Trajectories

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- Most organisations have a 3-5 year plan that move along the time continuum (not all projects will finish at the same point in time)
- As newer services are delivered it likely change the long term plan as new opportunities and risks become clear
- E.g. Site implements a Cost Measurement tool, in turn it then highlights the costs of performing specific clinical procedures, this information then leads to new projects to manage spending and create efficiencies

# The IT Asset

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- IT assets are resources that the organisation has or it can obtain
- These assets are used to support current services initiatives and new services, also can be used to create new assets
- The IT strategy details the changes to assets
- 4 Components:-
  - Applications
  - Infrastructure
  - Data and
  - IT Staff

# Applications

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- Software systems that users interact with to deliver clinical services (EPR, RIS/PACS, Scheduling etc.)
- Application Inventory is required
- Reduce variability (consolidate applications)
- Buy vs Build (risks, costs, time)
- Requires formal review for new applications and services
  - Sourcing – vendors, opensource
  - Uniformity – variance over large distributed organisations (site specific, best fit, interoperability)
  - Application Acquisition, what processes are in place to control purchase or development of new applications

# Infrastructure

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- Infrastructure assets are often required to support new IT initiatives
- May mean new methods to deliver services (Cloud, IaaS, PaaS) or reaching new locations
- New edge devices for managing security threats
- Capabilities; add new to enable new practices (working from home, VPN)
- Characteristics; High Availability, secure, L3 support

# Data

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- Assets have data, is this data in a standard format? Can it be shared? Accessible?
- Patient data linkages, can the data link to the EHR?
- How can data be extracted and used for analysis (if not standard can it be conditioned?)
- Obtain new data from other sources
- Data Integrity (quality)

# IT Staff Members

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- Software developers, system integrators, DBA's, Business Analysts, Infrastructure Analysts, Application Administrators, Application Analysts
- IT strategy may define new roles, changes to responsibilities, new training/skills development, position deprecations
- Outsource support
- Moving services to the Cloud requires a different skillset and role redefinition (job description)

# Normative Approach to Developing Alignment and IT Strategy

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- Larger organisations will generally have a structured approach to developing the IT Strategy
- Much smaller organisations will generally have an informal(unstructured) approaches
- Depending on the organisation it may only happen at specific times of year or several years
- Business Strategy and IT Strategy should be developed using the same approach:
  - Informal vs Structured
  - Progressive(iterative) vs Longer Time Periods

# Strategy Discussion Linkage

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- Generally the organisational strategy is formalised by executive management
- May involve sub-committees, function area teams, task forces that develop recommendations that will form the strategy
- Current State vs Future State
- The CIO plays a significant role in the assessment, selection and approval of the business strategy which will meet the organisations goals
- The IT strategy is integral to linking to the strategy



# IT Liaisons

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- Business function units like, Accounting, Finance;, Clinical Services, IT, Administration should have contact and direct input into the strategy
- Their ideas, knowledge, understanding, skills are needed to understand the proposals and the impact to their business
- Should also include cross-functional teams
- IT should be considered key to supporting all the other business functions

# New Technology Review

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- During the development of the strategy the senior leadership team (including the CIO) should communicate the strategy as it develops and discuss new technology and services as they evolve
  - Sub teams can begin exploring the technology
  - Proof of Concept
  - Begin identifying the new skill sets needed
  - Understand the implications of the change
  - Trade off one proposal for another

# New Technology Review (cont.)

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- Subjective and Objective approaches can be used to perform the analysis on the choice and how they fit into the current state
- Teams learn more about what is important other teams as they cross pollinate ideas
- Use scorecard and weighting tools to measure the options and fit into the business goals
- .....
- From this they begin to develop budgets, timelines, staff requirements, resources etc.

# New Technology Review (cont.)

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- Timeline and an implementation plan (roadmap) is key to understanding the projects the organisation is to undertake
- Not all projects can be done at once, some teams like IT can be overwhelmed by resource needs and conflicting demands
- A schedule allows visualisation of the plan and the critical path, which projects are critical if there are dependencies
- All the while the CIO is translating this with the other executives to ensure both strategies align
- Remember this can be a multi-year plan and needs managing as things change...

# IT Strategy and Alignment Challenges

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- Planning Methodologies
- Persistence of the Alignment Problem
- Limitations of Alignment
- Alignment at Maturity
  - IT Planning was Not a Separate Process
  - IT Planning had neither a Beginning or an End
  - IT Plan Emphasised Themes
  - IT Strategy is Not Always Necessary
- Emerging Technology

# Planning Methodologies

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- Plan – used to detail projects and implementation path, it can support:-
  - Identification of the portfolio of IT applications and services that are linked to the strategy
  - Identify alternatives that might not have been visible without the plan
  - Contributes to more thorough analysis of major aspects of the plan
  - Enhance and ensure necessary leadership participation and support
  - Make the organisation more decisive
  - Manage resources and allocate appropriately
  - Enhance communication of the developed plan
- A problem may be in finding a planning method that fits the scope of the strategy and its detail.. Out of scope for 3801...

# The Limitations of Alignment

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- Alignment is a Tool, it does not guarantee success
- If used wisely it will certainly help
- However, if there are internal issues within an organization (performance, mis-trust, bad history, siloes, ivory tower, poor interaction, poor leadership etc.) the strategy may fail anyway
- If the strategy was weak/poorly defined having a closely coupled IT strategy may not be of value
- A brilliant strategy may not be effective if the organization cannot implement it
- Often executives state that this is still one of their top ranked issues, alignment alone is not the answer

# Alignment at Maturity

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- Organisations that achieve high levels of IT excellence evolve in which alignment is embraced within the normal management strategy
- It is ingrained into the business culture
- Earl (1993) identified several characteristics of organisations exhibiting IT excellence
  - IT Planning was Not a Separate Process
  - IT Planning had neither a Beginning or an End
  - IT Plan Emphasised Themes
  - IT Strategy is Not Always Necessary



# IT Planning was Not a Separate Process

- IT planning was an integral part of the strategic planning process and management discussions
- All business functions (Finance, HR, Engineering, Production, Sales & Marketing) embrace IT and becomes a critical part of their planning process
- Did not isolate or separate out IT into a single IT Steering Committee

# IT Planning had Neither Beginning or an End

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- IT Planning is part of a continuous improvement process without a start or end
- Even though the business may have an annual strategy planning program (based on fiscal year for example) planning and discussions do not end after the new plan is released

# IT Planning Involved Shared Decision Making and Shared Learning

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- IT leadership informs the business of potential strengths, opportunities, threats and weaknesses within the IT framework
- Organisational leadership ensured IT Leadership understands strategies, business plan and constraints
- The shared discussions evolve into the IT plan with a set of IT priorities

# IT Plan Emphasised Themes

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- A theme, e.g. Cost Reduction is emphasised throughout the plan
- The projects undertaken throughout the year are focussed on supporting the theme
- Themes continue for many years, IT projects are generally shorter, the iterative benefit is that the nature of the themes becomes ingrained into the IT Team
- The IT teams learn to identify new opportunities outside their normal work and can push this “upwards” through the business

# IT Strategy is Not Always Necessary

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- Often, IT activities are not strategic, for example upgrade a software application, network device upgrade, but they are important!
- They do not necessarily impact the business plan or require constant CIO intervention
- Often applications and service do not always create competitive advantage
- In the bigger picture general IT work does not require strategic thinking or discussions to realising organisational goals

# The Challenge of Emerging Technology

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- Fact – New Technology appears almost daily
- How do executives select new technologies?
- Recognise the systems and services that need replacing
- Product hype!
- Which one may become Gold Label, Best of breed, The Money Pit....
- BYOD (Bring Your Own Device), Mobility for Doctors
- The challenge of the “Managed Device”

# The Hype Cycle



Figure 12.4. Hype Cycle for emerging technologies (Gartner 2014), Health Care Information Systems, p422 4<sup>th</sup> edition

# The Hype Cycle

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1. Technology Trigger: Breakthrough, early POC and media interest, often not usable product available
2. Peak of Inflated Expectations: Early publicity by proponents reaches a crescendo with little experience of the technology
3. Trough of Disillusionment: Interest wanes as experiments and implementations fail, immature product or service
4. Slope of Enlightenment: More knowledge is gained in the technology and how it can be applied. Likelihood POC/Pilots are implemented with a view to longer term adoption
5. Plateau of Productivity: Mainstream uptake, improved product viability and vendor assessment, broader application and relevance



# Emerging Technology (cont.)

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- During the conversations on new technologies it is important to understand where the application sits on the Hype Cycle.
- May be better to let the market shape the application – stay off the bleeding edge
- It may be better to try a pilot scheme (not full production)
- Must review after the defined pilot implementation is over.

# Summary

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- IT strategy and alignment to the business strategy is complex and requires a lot of work through communications of ideas, needs and opportunities
- The complexity of the business and its culture often make this a very difficult thing to fully align
- Relies on effective discussions and debates
- The best organisation merge the IT strategy as a normal act of operations