



Digital Technology in Health and Social Care

Introduction to Project, Service & Programme Management

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Athrofa Wybodaeth Ddigidol Cymru

Personal introduction

- MSc. Programme Director, UWTSD.
- Reader in Health Informatics, University of Portsmouth
- NHS IT 1994-2009 (and 2019-21, part-time)
 - Community, health authority, shared service, DGH
 - Part-time MSc 2001-3, PhD 2005-9
- University of Portsmouth since 2009 (part-time since 2019)
 - Teach and supervise undergrads, postgrads and PhD students
 - Numerous publications and funded R&I projects
 - Promoted from Senior Lecturer to Reader in 2019
 - Chair, Faculty of Technology ethics committee
- Deputy Editor, *BMJ Health & Care Informatics*: <https://informatics.bmj.com/>
- Chair, BCS Health & Care
- Board member, HL7 UK
- Co-chair, Medinfo 2021: <https://imia-medinfo.org/medinfo21/>



<https://researchportal.port.ac.uk/en/persons/philip-scott/publications/>

Why project and programme management?

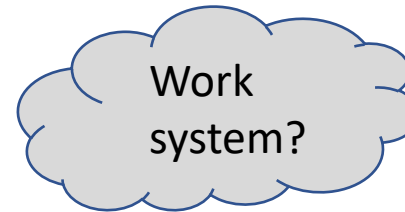
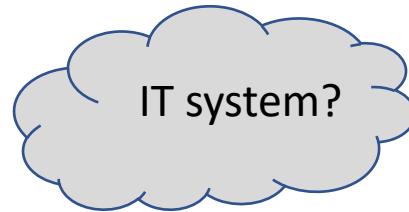
- Coursework part 1:

For this assessment you are required to compile a document devising a detailed system improvement initiative for the adoption of a more digitally oriented approach to your current role.

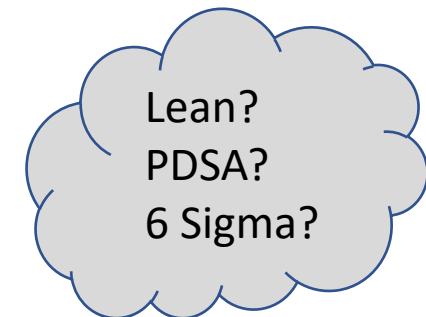
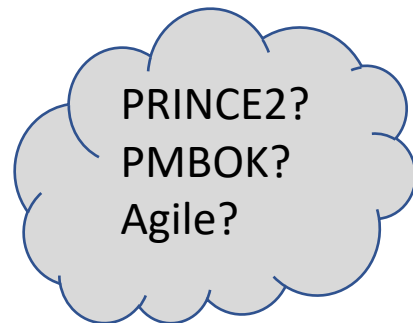
- Select and explain an appropriate project management methodology

Unpacking “system” & “project management”

For this assessment you are required to compile a document devising a detailed **system** improvement initiative for the adoption of a more digitally oriented approach to your current role.



- Select and explain an appropriate **project** management methodology



Lecture learning outcomes

- Differentiate between:
 - Project management (specifically PRINCE2).
 - Programme management (specifically MSP).
 - Service management (specifically ITIL).
 - Quality improvement methods.
- Refine your interpretation of “project management methodology” for your coursework topic.
- Explain general principles of:
 - Scale
 - Complexity
 - Abstraction
 - Tolerance of ambiguity.

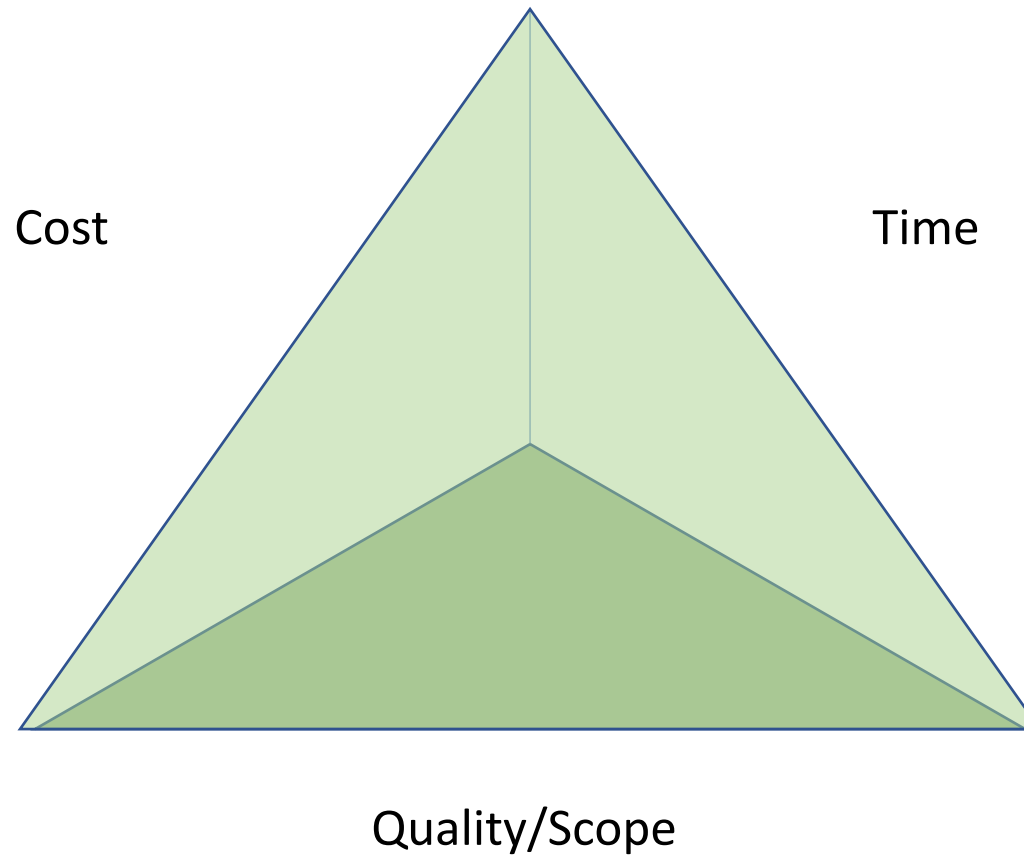
Project management methodologies

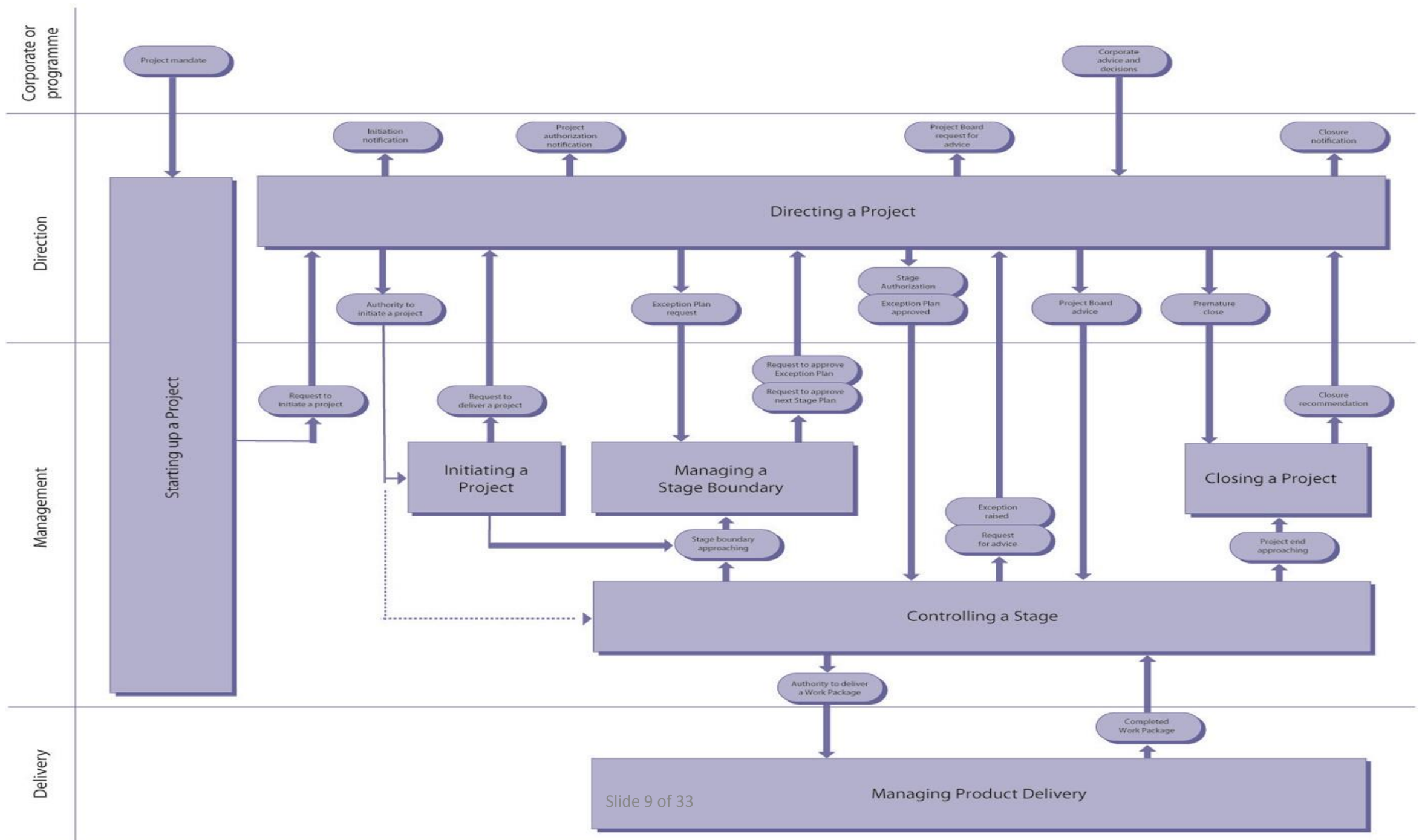
- Term 'project management' invented by US military in 1950s, informal practice has existed for millenia.
- PRINCE2 (1989-2017) – UK Government-owned (now AXELOS joint venture).
- Project Management Institute (PMI, US) Body of Knowledge (PMBOK) (1996-2021).
- Association for Project Management (APM, UK) Body of Knowledge (1992-2019).
- ISO 21500: 2012-2021 (mostly PMBOK).

Defining project characteristics

- Definite tasks/products/outcomes/controls.
 - Defined budget, stages, gateways, timetable, resources.
 - Usually a temporary multidisciplinary team.
 - Usually to enable business change; often part of a programme or wider business strategy.
 - Deals with uncertainty, novelty, innovation.
 - Often has multiple disparate stakeholder interests.
 - Finite, transient, specific, delimited.
 - Has to manage Risks, Assumptions, Issues, Dependencies and Opportunities (RAIDO).
-
- If you know about Agile – why, given the above, is Agile NOT a project methodology...?
 - If you don't, see <https://agilemanifesto.org/>

Project characteristics: “Iron triangle”





PRINCE2

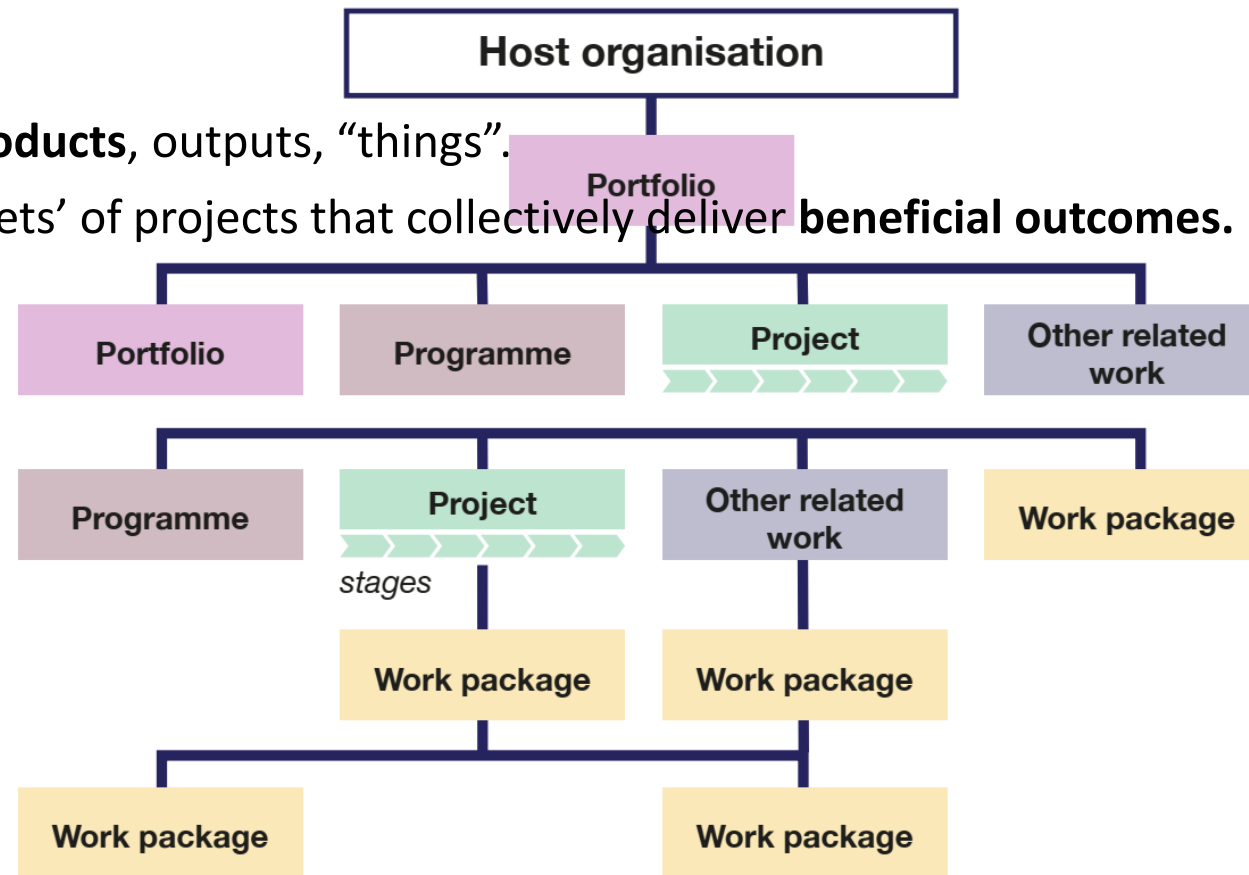
- PRINCE2 is based on seven **principles**:
 - Continued business justification
 - Learn from experience
 - Defined roles and responsibilities
 - Manage by stages
 - Manage by exception
 - Focus on products
 - **Tailor** to suit the project environment

PRINCE2 management roles

- Project Board **owns** the project
 - Executive
 - Senior user
 - Senior supplier
- Project manager **runs** the project
 - PM's plans have to be approved by PB
 - PID will define limits of PM's delegated authority

Programme management

- Projects deliver **products**, outputs, “things”.
- Programmes are ‘sets’ of projects that collectively deliver **beneficial outcomes**.



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002673/1195-APS-CCS0521656700-001-Project-Delivery-standard_Web.pdf

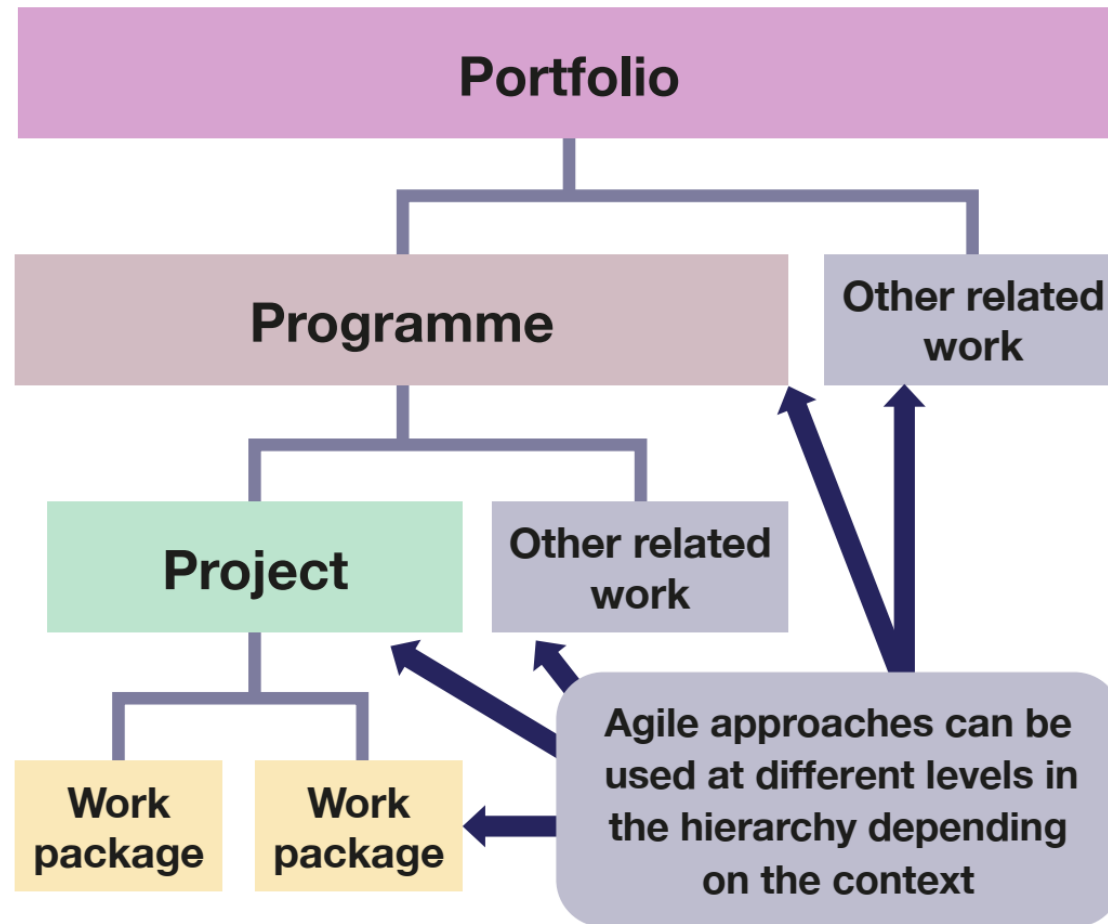
Programme management

A **programme** is a unique, temporary, flexible organisation created to co-ordinate, direct and oversee the implementation of a **set of projects** and other related work to **deliver outcomes and benefits** related to a set of strategic objectives.

A **project** is a unique, temporary management environment, undertaken in stages, created for the purpose of **delivering one or more business products or outcomes**. A project might be standalone within a portfolio or part of a programme.

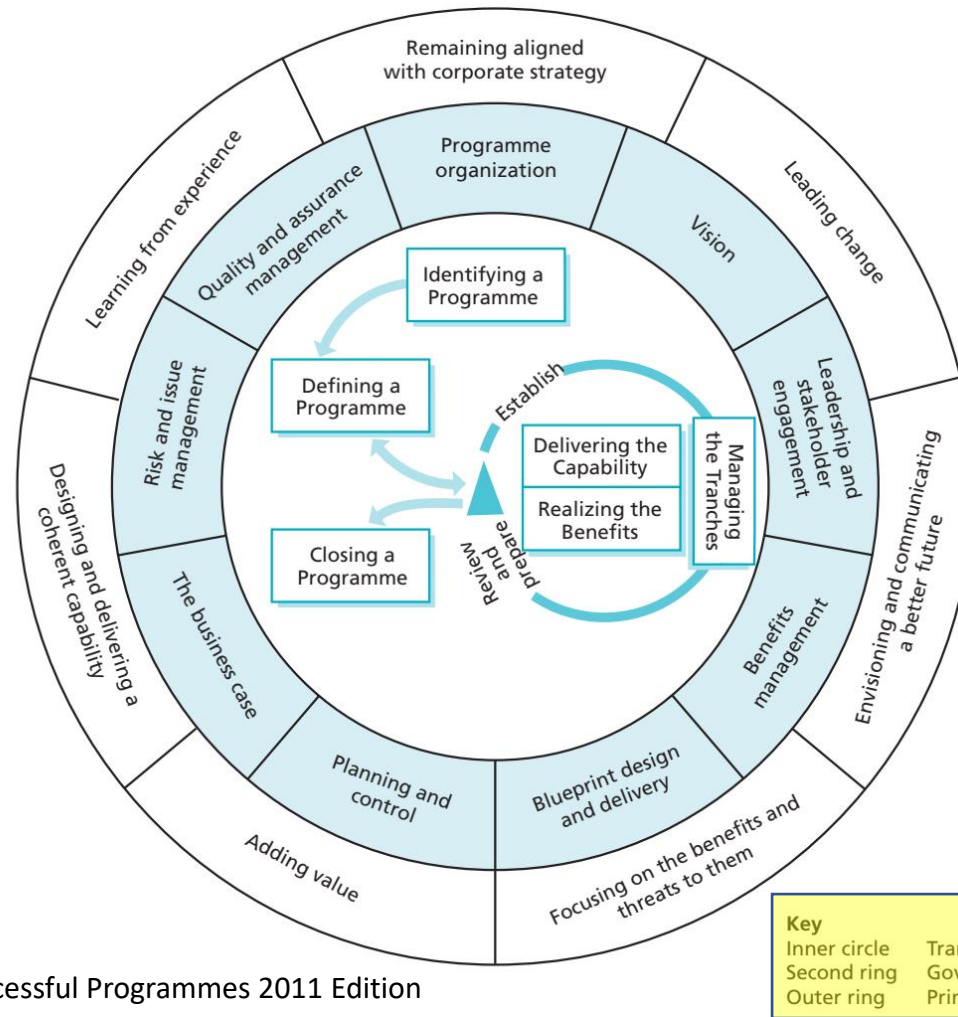
AXELOS and Cabinet Office. Managing Successful Programmes 2011 Edition

Programme management



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002673/1195-APS-CCS0521656700-001-Project-Delivery-standard_Web.pdf

Programme management



AXELOS and Cabinet Office. Managing Successful Programmes 2011 Edition

Programme management

		Predictability of outcome		
Focus of the change		High	Medium	Low
	Specification-led	- Major engineering programmes, e.g. Olympic park - Complex products based on known design - Large-scale technology replacements	- Globalization of technology services - Adoption of technology that is new to the organization, e.g. ERP - Multi-organization delivery	- Pioneering engineering techniques - Unproven technology implementation - Specification-led organizational change
	Business transformation	- Implementation of approaches used in similar organizations, e.g. ISO adoption - Process change affecting technology and structures	- New products or services to existing market place - Changing historical working practices, values and structures - Supply chain changes, e.g. outsourcing of services	- Diversification of new products into new markets - Internal external and customer behaviour - Radical restructuring of supply chains
	Political and societal change	- Change to current legislation or policies - Increases or decreases to investment programmes - Predictable or clear stakeholder base	- New legislation reacting to societal trends - Legislative change to affect socio-economic behaviour - Changes to public service delivery models, e.g. health provision	- Changes to societal values and behaviour, e.g. criminality - Incentive-driven change to lifestyles and economic behaviour - Long-term societal effects, e.g. health

AXELOS and Cabinet Office.
Managing Successful Programmes
2011 Edition



Programme management

- Vision → Design & deliver blueprint → Realise benefits

The **vision statement** encapsulates the vision and is used to communicate a **high-level impression** of the desired future 'to-be' state, in contrast to the blueprint, which is a much more detailed description of both the current organization and the changed organization.

The **blueprint** is a **model of the future organization, its working practices and processes**, the **information** it requires and the **technology** that supports its operations.
[aka "target operating model"]

The **blueprint is not concerned with how to get to the future state**. The 'how' is dealt with when designing the projects dossier...

AXELOS and Cabinet Office. Managing Successful Programmes 2011 Edition

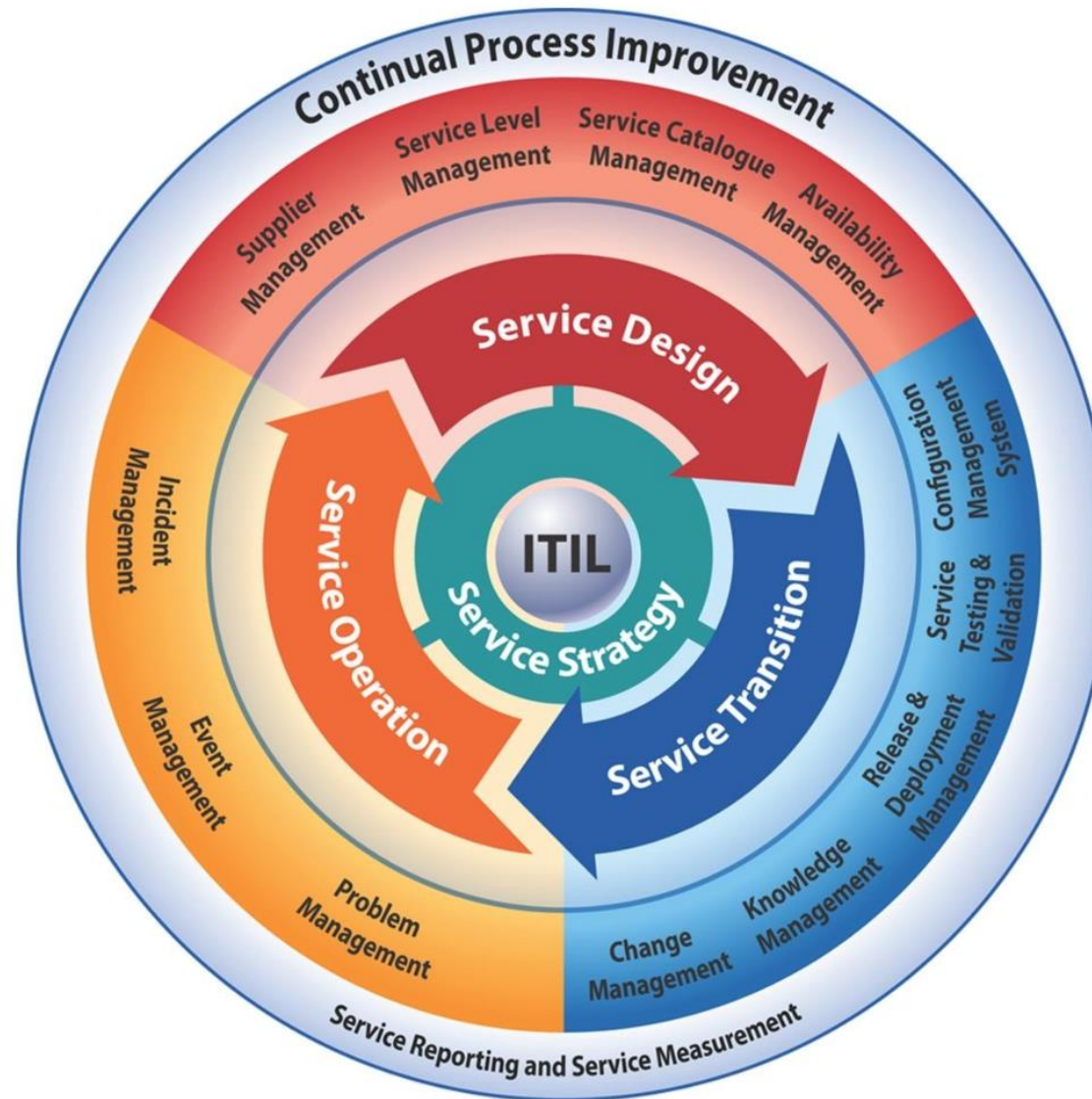
ITSM: What and why?

- ITSM is **IT Service Management**
 - A structured and standardised approach to delivering the operational IT services needed by the business
 - Project management is for new things, service management is for routine things and incremental changes (but can lead to fundamental change)
- Why is ITSM needed?
 - Industry terminology is variable and inconsistent
 - Job titles and product descriptions can be confusing
 - Operational IT services so crucial to business that professional discipline is required

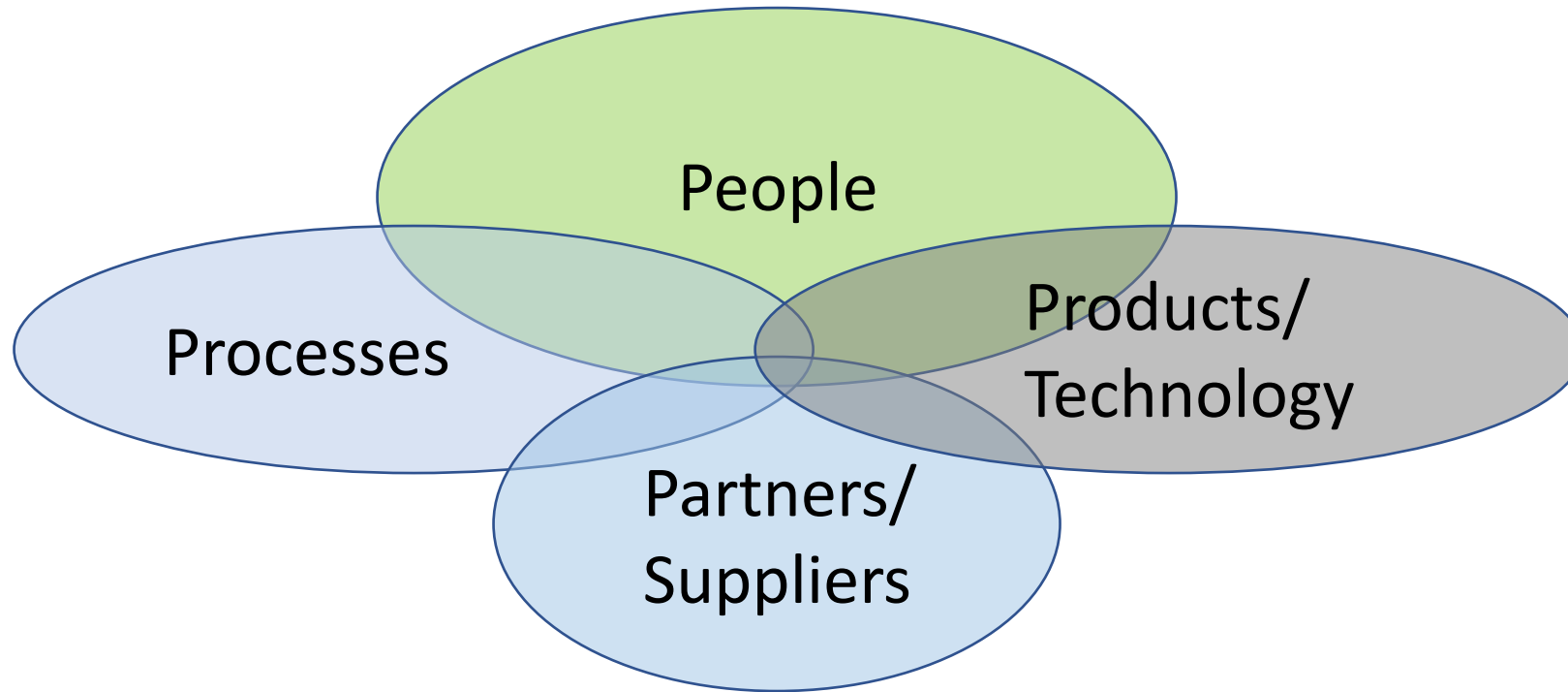
ITSM frameworks

- ITIL
- Microsoft Operating Framework (MOF)
- HP: ITSM Reference Model & Solutions for ITSM
- IBM Service Management
- ISO 20000

ITIL lifecycle



ITIL Service Design: Four Ps



Based on *ITIL Service Design*, Fig 3.3

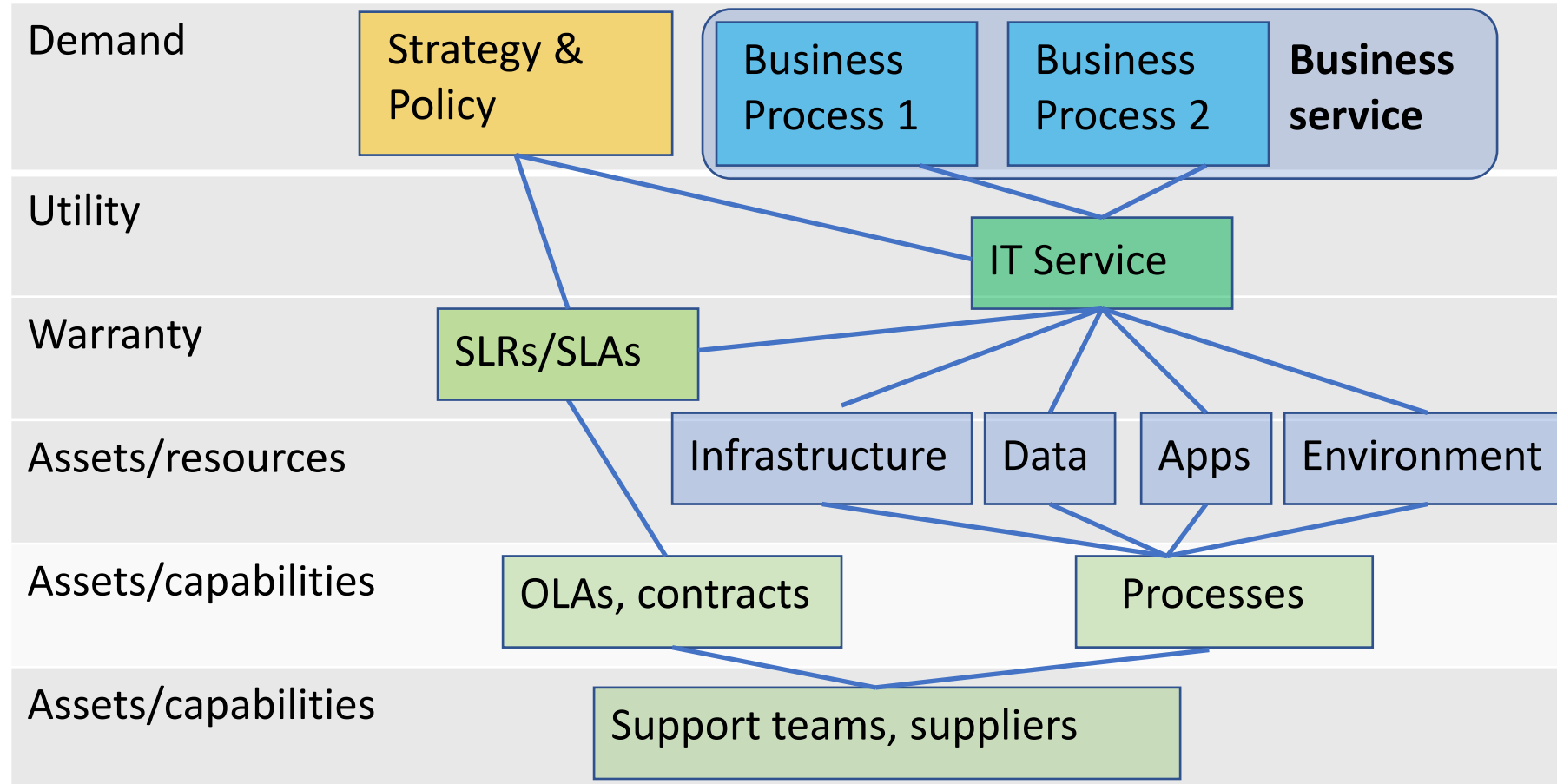
Key ITIL functions & documents

- Service Desk
 - Call logging and monitoring
- IT technical management
 - Infrastructure planning
- Applications management
 - Software support
- Operations management
 - FM and routine tasks
- Service Level Agreement (SLA)
- Operational Level Agreement (OLA)

ITIL Service Design basic concepts

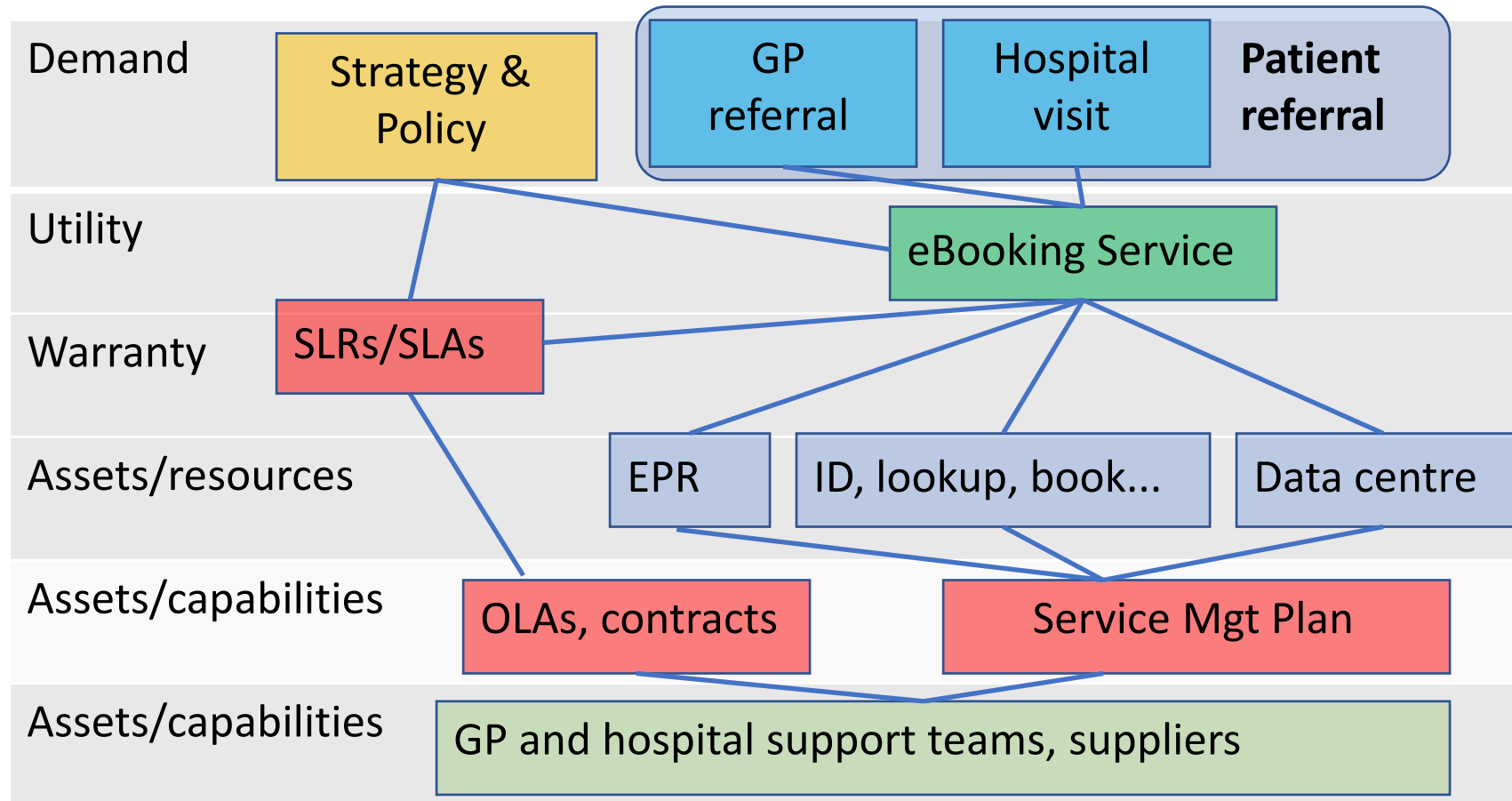
- Asset
 - Any **resource** or **capability**. The assets of a service provider include anything that could contribute to the delivery of a service.
- Capability
 - The ability of an organization, person, process, application, IT service or other configuration item to carry out an activity. Capabilities are **intangible** assets of an organization.
- Resource
 - A generic term that includes IT infrastructure, people, money or anything else that might help to deliver an IT service. Resources are considered to be [**tangible**] assets of an organization.

Service composition



Based on *ITIL Service Design*, Fig 3.4 (main components only)

Service composition (NHS example)



Quality improvement (QI) methods

- Usually incremental not wholesale change.
- Typically focused on processes.
- Often have enabling IT; sometimes used to evaluate IT impact.
- See <https://www.health.org.uk/sites/default/files/QualityImprovementMadeSimple.pdf>
- Examples:
 - PDSA cycles
 - Lean
 - Six Sigma
 - A/B testing.

QI: PDSA/Deming cycle

- Deming cycle: Plan, Do, Check, Act (PDCA, or PDSA)
 - Iterative hypothesis testing and refinement
 - Used in various methods such as Six Sigma (Motorola)

Analyze variances to determine causes and start sub-cycles if needed

Identify any variance from planned outcomes

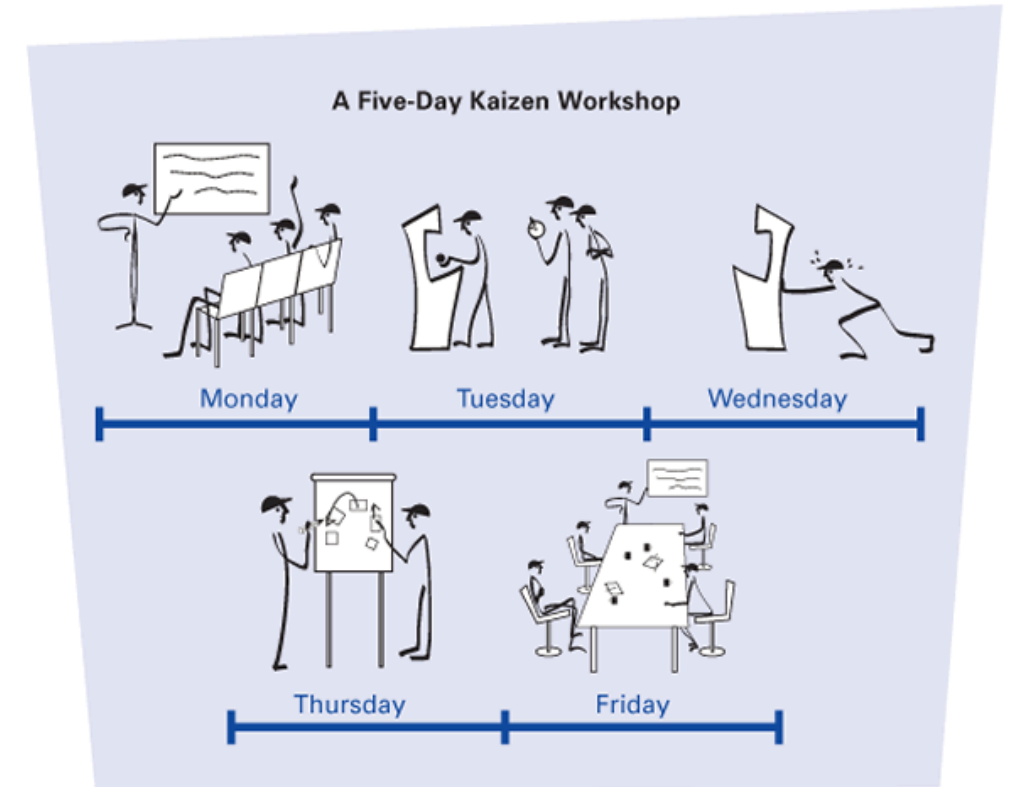


Establish objectives and processes needed

Implement new processes

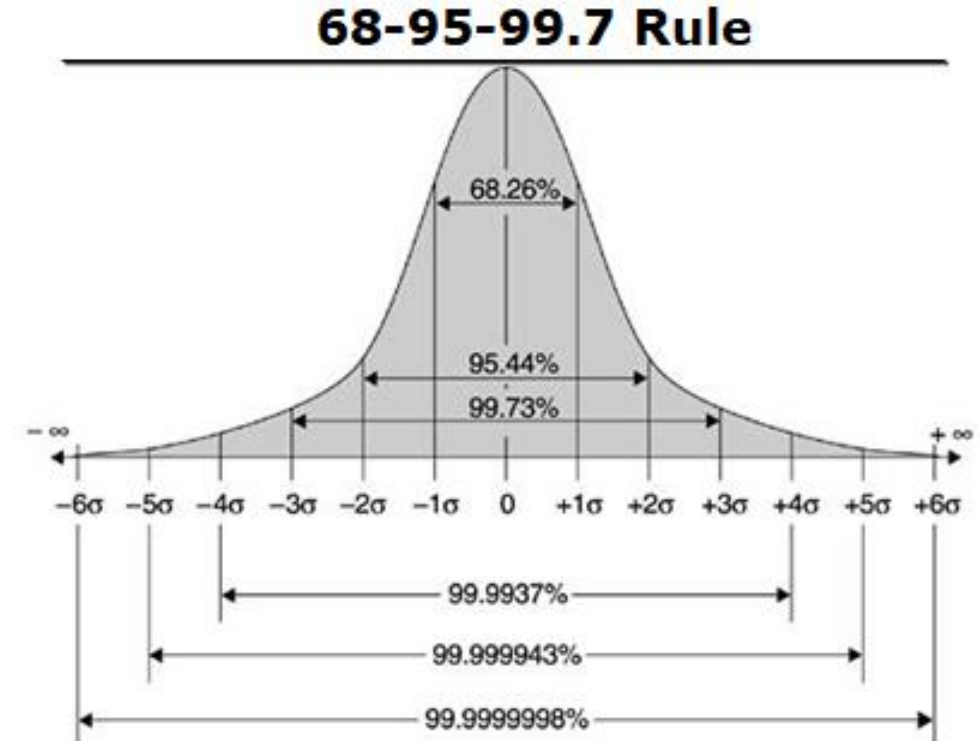
QI: Lean

- Lean
 - Toyota production philosophy.
 - Remove “waste” – unnecessary steps in business processes.
 - Identify “value streams”.
 - Kanban – process control for just-in-time delivery.
 - Kaizen – continuous improvement (~= PDSA).
 - Applied in wide range of industries.



QI: Six Sigma

- Six Sigma
 - Invented by Motorola.
 - Continuous improvement strategy, based on hard data and statistical analysis.
 - Reduce the variation of a process so that the distance from the process target (mean) to the defect threshold is 6σ .
 - DMAIC: define, measure, analyse, improve and control.



QI: A/B testing

- A/B testing
 - Widely used by tech companies to assess user preference for website navigation/features.
 - Concurrent randomized trial of version A versus version B to assess user behaviour and outcomes (click-through, transactions, revenue).
 - Can be applied to QI interventions, using EHR data.
 - NYU Langone Health did 10 randomized QI projects in 1 year!
 - Any usage in UK health and care?

The NEW ENGLAND JOURNAL of MEDICINE

SOUNDING BOARD

Creating a Learning Health System through Rapid-Cycle, Randomized Testing

Leora I. Horwitz, M.D., M.H.S., Masha Kuznetsova, M.P.H., and Simon A. Jones, Ph.D.

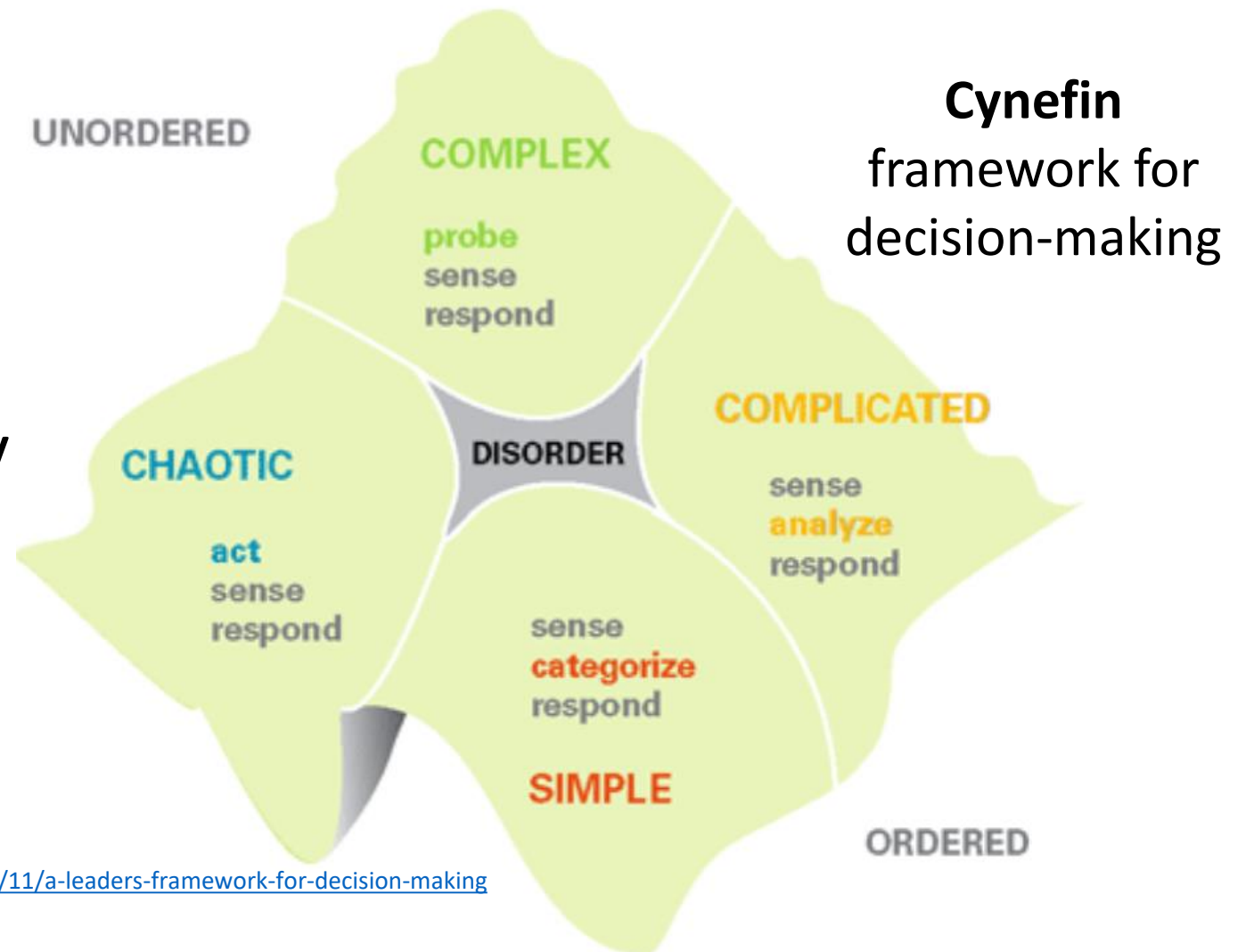
Last year at NYU Langone Health, we showed millions of best-practice alerts in the electronic health record system to prompt physicians to avoid adverse events and to promote guideline-based care. We called hundreds of patients to remind them that they were overdue for their annual physical examination. We made approximately 19,000 postdischarge telephone calls to patients in an attempt to reduce their risk of readmission. We sent thousands of letters to remind patients of unmet preventive care needs. In addition, we started a community health worker program in the emergency department to connect hundreds of high-risk patients to outpatient care. Collectively, these programs alone cost our institution more than a million dollars and used resources that potentially could have been used in other ways to improve care and outcomes. Until recently, we had no real idea whether any of these efforts were working.

domized tests of existing systems-level programs (i.e., randomized quality-improvement projects). A learning health system is characterized by “continual improvement and innovation” with “new knowledge captured as an integral by-product of the delivery experience.”¹ We now know with confidence that changing the text of a provider-targeted prompt to give tobacco cessation counseling in an office produces a significant increase in rates of medication prescriptions and that changing just a few sentences in telephone outreach scripts can both shorten telephone calls and increase rates of appointments for annual examinations. We have also learned that our postdischarge telephone calls have made no difference in rates of readmission or patient-experience ratings, that our appointment-reminder letters were completely ineffective, and that our community health worker program was inadvertently targeting patients who were

<https://pubmed.ncbi.nlm.nih.gov/31532967/>

Broader concepts to think about...

- Scale
- Complexity
- Abstraction
- Tolerance of ambiguity



Snowden & Boone, Harvard Business Review, Nov 2007: <https://hbr.org/2007/11/a-leaders-framework-for-decision-making>

Compare and contrast

- PRINCE2: products, medium-large scale
- MSP: business outcomes, medium-large scale
- ITIL: technology services, small-large scale
- QI: quality metrics, small-large scale

Thank you



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Slide 33 of 33



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