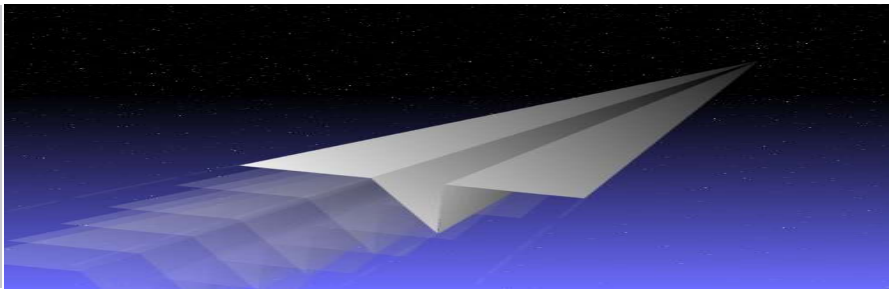
How to identify problem projects before they to start to fail



Bal Matu C.Eng MIET CQP FCQI CISA CEH ECSA CPSA

14 November 2024

bal@DevelopCapability.co.uk
www.DevelopCapability.co.uk

Bal Matu

- 6 yrs - Graduate Engineer to Head of Design Assurance (Defence)
- 2 yrs Quality Manager (Defence)
- 2 yrs – Auditor/Consultant/Trainer for SGS
- 30+ yrs – Auditor/Consultant/Trainer (Contract)
- IRCA Registered Lead Auditor since 1992
- TickIT*plus*/ISO20000/ISO27001/ISO22301/TISAX Lead Auditor
- World Lottery Association Security Control Standard Auditor
- Cyber Essentials Plus Auditor
- EC-Council Certified Ethical Hacker
- EC-Council Certified Security Analyst
- Certified Penetration Tester

Impact of failed projects

- The problem of **failed IT projects** is one that **impacts** companies across the world, costs millions in lost revenue, wastes resources, and prevents companies from reaching their business objectives.
- Most organisations will perform a post project review to understand why the project didn’t perform as expected and identify lessons learned.
- Is there a better way to use the lessons learned?

Cost of project Failure

Post Project Review/Lessons Learned

- Traditional approach
  - Team Reflection
  - Understanding
  - Lists
  - Actions
  - Database

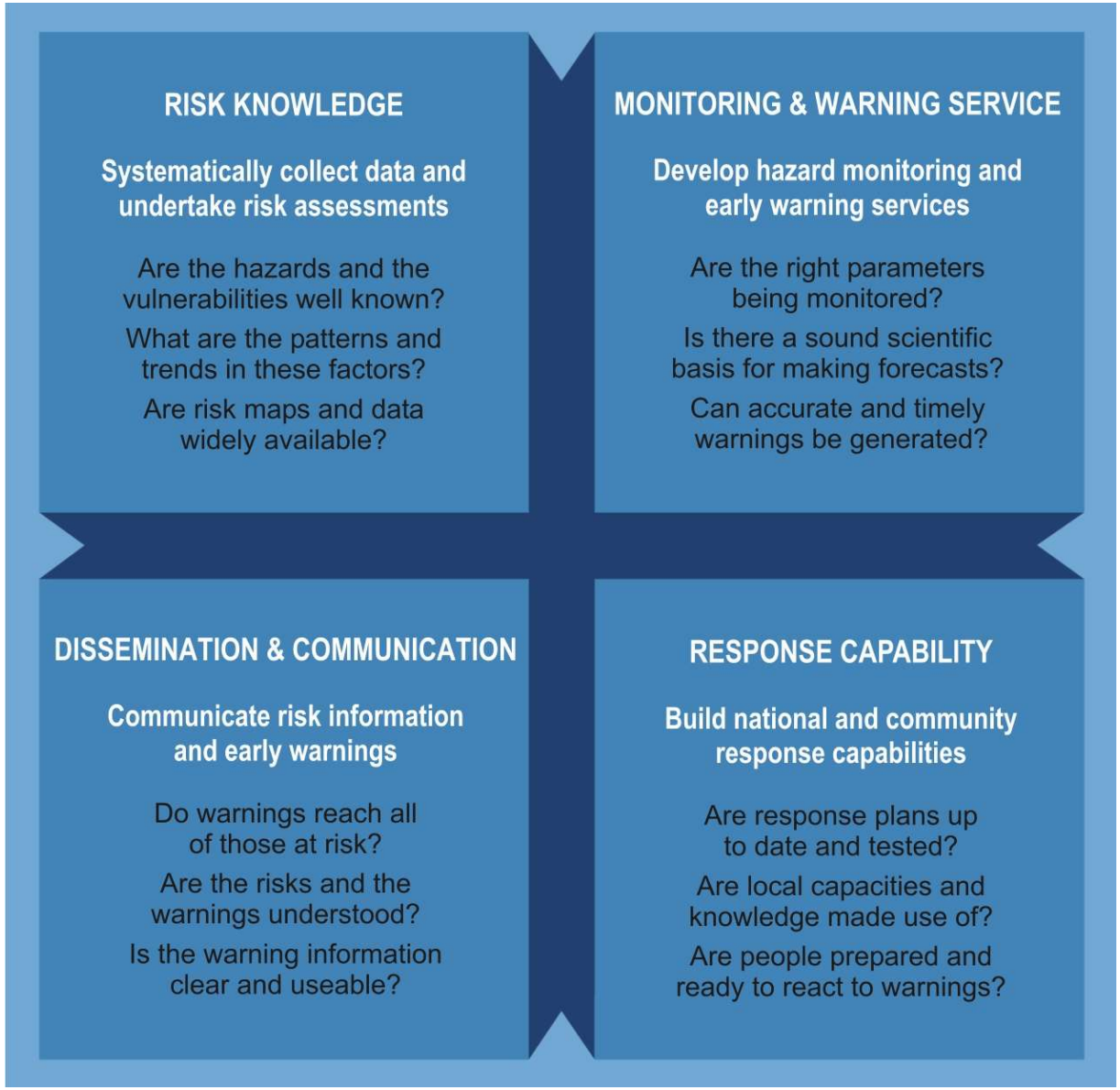
- Using the Lessons Learned - varies
  - Updates to templates
  - Knowledgebase for future projects to consider
  - Identify competency/training needs
  - Better identification of future risks

The problem with this approach

- Lessons learned are gathered after the case
- We have already ……..
  - Missed delivery deadline
  - Overspent against the budget
  - Experienced a Customer Complaint/Dispute
- What if …..
  - We had an Early Warning System (EWS)
  - A radar or sonar system – a form of monitoring and alarm system

Early Warning Systems (EWS)

- Tsunamis
- Earthquakes
- Volcanic Activity
- Landslides
- Floods
- Droughts
- Hurricanes
- Forest Fires
- Pests & Diseases on crops
- Viruses and other health hazards



Projects - Early Warning System (EWS)

- Obtain **knowledge** to build a baseline understanding of why projects fail
- Determine what to monitor to identify the **risk evolving through time**
- Early Warning System to package the monitoring information into **actionable warning messages** understood by those that need, and are prepared, to hear them
- Build a **response capability** for when failure signals are detected

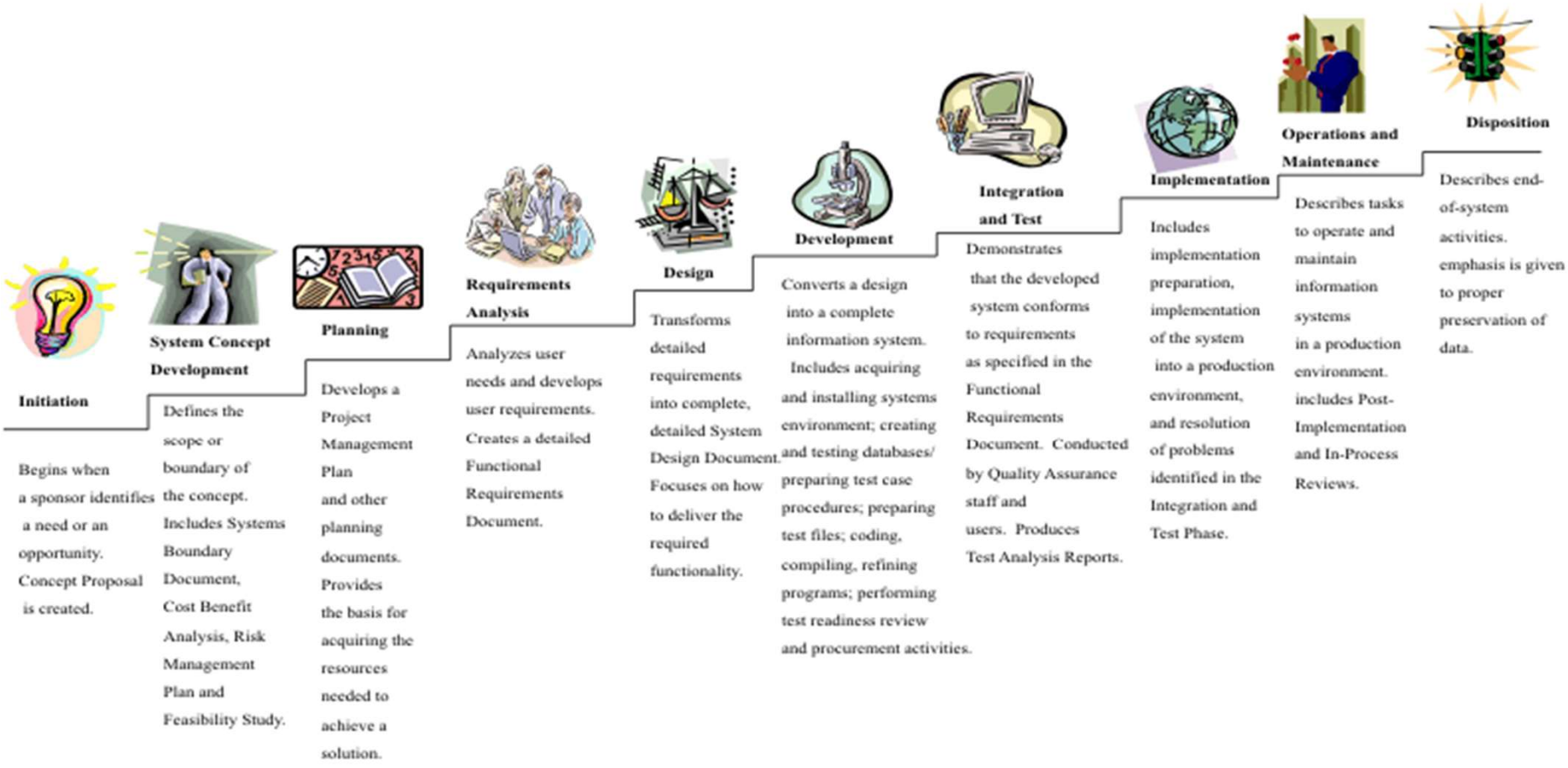
EWS Step 1 - Obtain Knowledge

- Data from the past lessons learned
- Identify what data could be an indicator, of potential project failure, based on project complexity

- ….. Note …. the knowledge data needs to be comparable…

SDLC Phases

Systems Development Life Cycle (SDLC)
Life-Cycle Phases



Data - Information - Knowledge

- The Challenge
  - Understand and interpret to make informed decisions
- Difficulty of comparing data e.g. due to different lifecycles, level of complexity or innovation…
  - Waterfall, Iterative, Agile….
- Project Complexity - Analysis
  - Categorise – Innovative, R&D, Implementation, Transformation
  - Methods – initiating, planning, executing, monitoring & controlling and closing
  - Tailoring rules to allow comparison of data

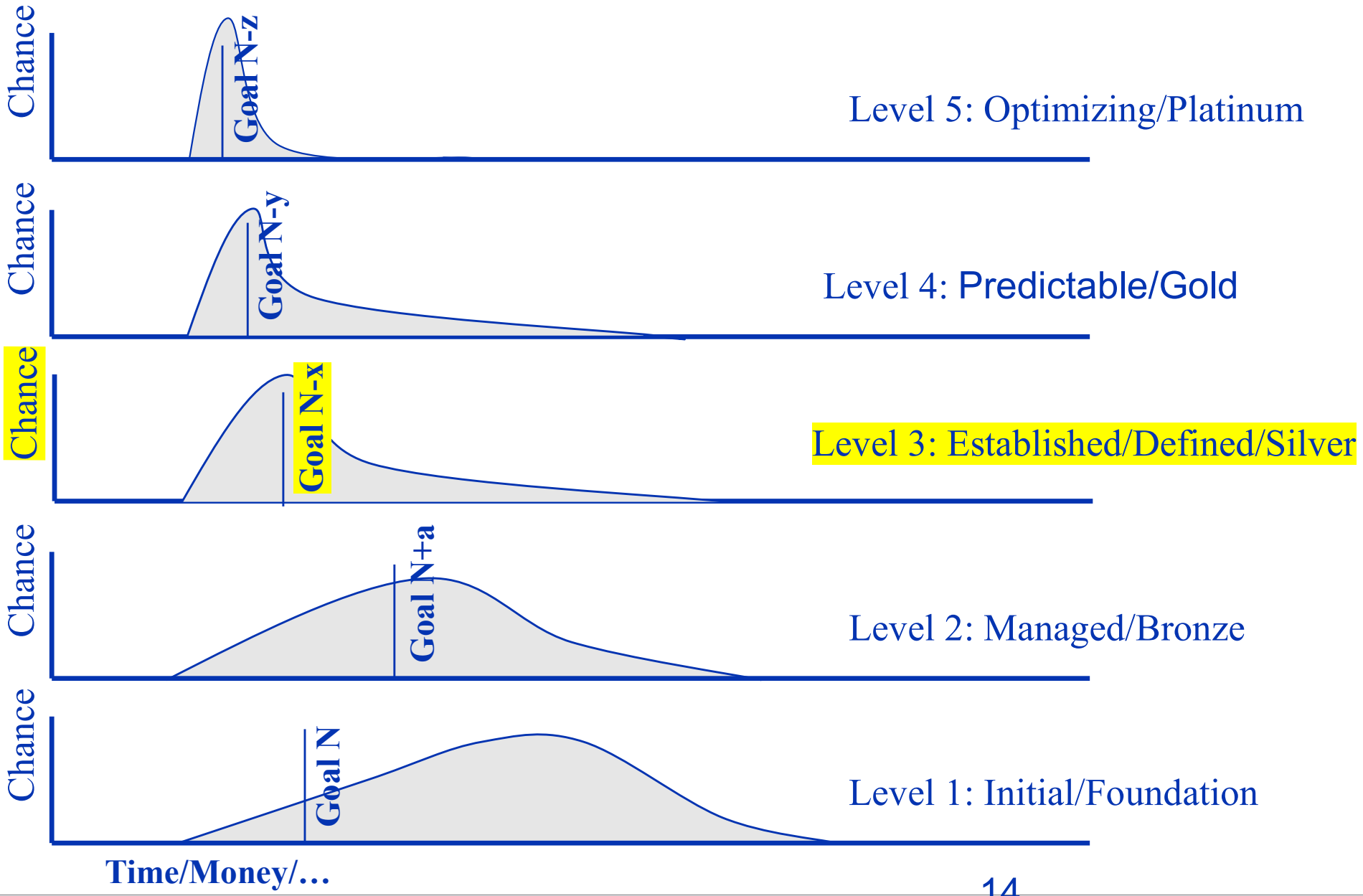
EWS Step 2- Use the knowledge

- The Challenge
  - Need to **categorise** similar projects (complexity and lifecycle)
  - Create **established ways of working** to allow data to be comparable
  - Identify items to monitor using **knowledge from lessons learned**
- Cost to complete, Change Requests, Stakeholder participation, Resource availability, Change of PM ……
- Examples could be
  - Stakeholder involvement (Cust Rep/Product Owner) for Agile development
  - Number of Change Requests in Waterfall projects for innovative design

EWS Step 3 – Monitor using KPIs

- Tracking
  - Project Status Reporting
  - Dashboards
  - Scorecards
- Data
  - Based on **established** processes
  - Readily available
  - Normalised to enable comparison
  - Reliable
- Process Assessment (using ISO15504)
  - TickITplus/CMMI/SPICE – to get **established** processes

Process Assessment & Maturity levels



TickITplus

DEVELOP CAPABILITY

The implemented process achieves its process purpose	The performed process is implemented in a managed fashion and its work products are appropriately established, controlled and maintained	The managed process is now implemented using a defined process capable of achieving its process outcomes

Foundation

PA 1.1 Process performance attribute

a) The process achieves its defined purpose
   - Production of an artefact
   - A significant change of state
   - Meeting specified constraints

Bronze

PA 2.1 Performance management attribute

a) Objectives Identified
b) Planned and monitored
c) Adjusted to meet plans
d) Responsibilities & authorities defined, assigned & communicated
e) Resources & information are identified, made available, allocated & used
f) Interfaces between involved parties are managed

- ### PA 2.2 Work product management attribute

a) Requirements defined
b) Requirements for documentation and control
c) Appropriately identified, documented and controlled
d) Reviewed in accordance with planned arrangements and adjusted as necessary

Silver

PA 3.1 Process definition attribute

a) A standard process with tailoring guidelines is defined
b) Sequence and interaction of processes is determined
c) Competencies and roles are identified
d) Infrastructure and work environment identified
e) Effectiveness and suitability monitored

PA 3.2 Process deployment attribute

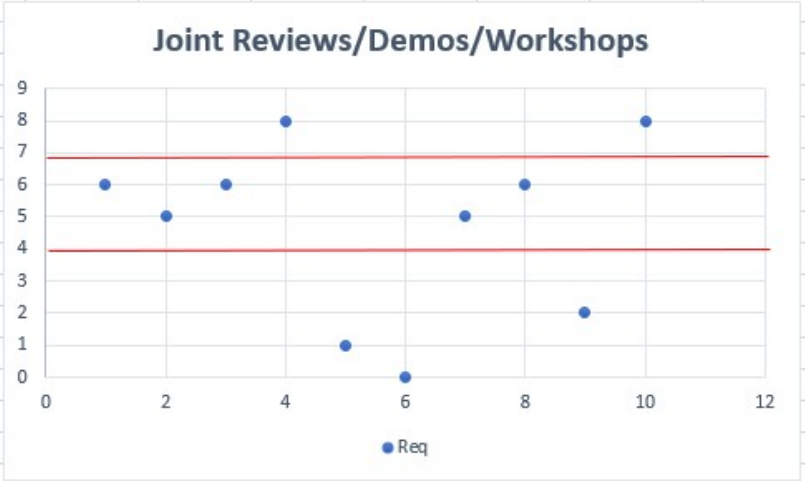
a) Defined process based on selected/tailored standard process is deployed
b) Roles, responsibilities and authorities are assigned and communicated
c) People are competent based on education, training and experience
d) Resources and information are made available, allocated and used
e) Infrastructure & work environment are made available, managed & maintained
f) Data are collected and analysed to understand the process and drive continuous process improvement

Established/Silver (3)

- Processes for management and software engineering are documented, standardized and integrated in a standard software development process
- All **projects use an approved, adapted version of the standard software process** for the development and maintenance of software
- Processes are used to let software managers and engineers be more effective
- There is training in the software process

Agile – Customer Rep/Product Owner

	Joint Reviews/Demontrations/Workshops					
	Req	Design	Implement	Testing	Release	RAG
Project 1	6	2	0	3	0	G
Project 2	5	1	1	2	0	G
Project 3	6	2	1	2	0	G
Project 4	8	2	0	1	0	G
Project 5	1	1	1	0	0	R
Project 6	0	1	0	0	0	R
Project 7	5	2	1	1	0	G
Project 8	6	1	0	2	0	G
Project 9	2	1	1	1	0	R
Project 10	8	2	1	4	0	A

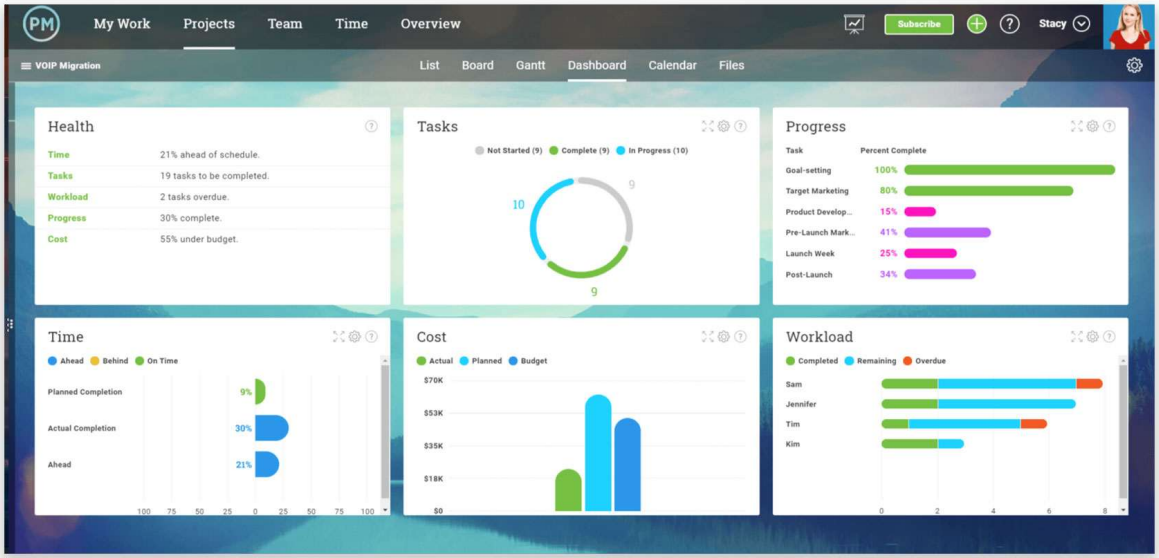


Waterfall Req/Design phases – CRs

	Req	Design	Implemen	Testing	Release	RAG
Project 1	5	2	0	1	0	G
Project 2	6	1	1	0	0	G
Project 3	7	3	0	0	0	A
Project 4	6	2	0	0	0	G
Project 5	7	1	1	0	0	G
Project 6	0	2	0	0	0	R
Project 7	1	2	0	0	0	R
Project 8	5	3	0	0	0	G
Project 9	6	1	1	0	0	G
Project 10	12	4	2	0	0	G

EWS Step 4 – Use KPIs and respond to EWS

- Project Status Reports
- Project Reviews
- Phase Reviews
- Gate Reviews
- Checkpoints
- Health checks
- Dashboards
- Scorecards
- Audits



Summary

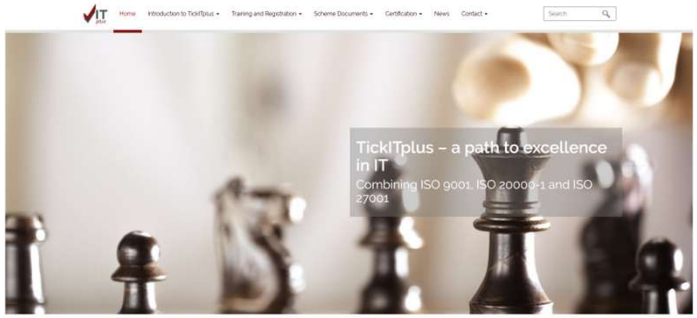
- Move from compliance to performance by being able to predict project performance through project monitoring and your EWS based on previous project performance knowledge

The Vision

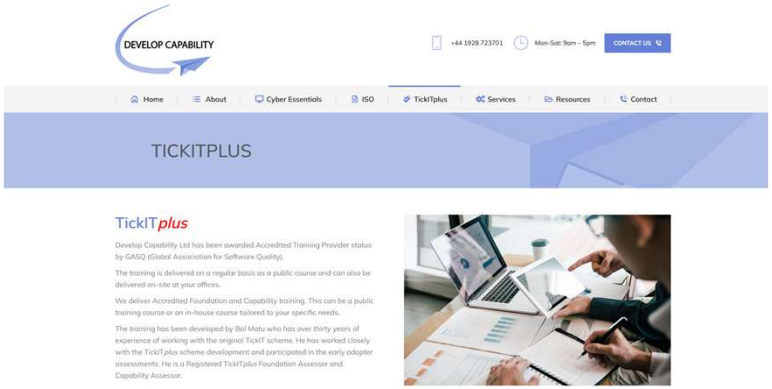
- We start to use the performance data to help us look forwards …and
- Create a Vision to improve ..
  - Timely Planning
  - Effective resourcing
  - Stakeholder involvement
  - Manage project requirements
  - Monitor cost to complete
  - Manage risks

TickITplus

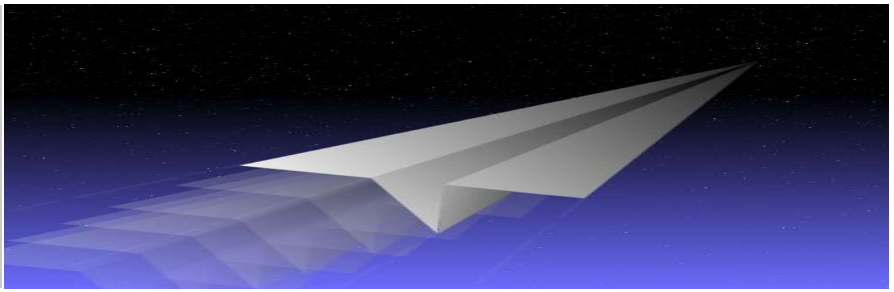
- TickIT*plus* website
  - https://www.tickitplus.org/en/home.html



- TickIT*plus* Training
- https://www.developcapability.co.uk/tickitplus/



Thank you



Bal Matu C.Eng MIET CQP FCQI CISA CEH ECSA
Develop Capability Ltd
www.DevelopCapability.co.uk
bal@DevelopCapability.co.uk

`