

INFO5990: Professional Practice in IT

Week 4: People and Teams

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Remember...

Did you complete the quiz?
Did you do the readings?

The lecture will start at 7:05pm

“People think that computer science is the art of geniuses but the actual reality is the opposite, just many people doing things that build on each other, like a wall of mini stones”.

Donald Knuth

Quick Overview of Today



Part A: Theory

Focus: Sourcing and managing human resources; consulting and contracting; team structures.



Part B: Discussion on project success / failure

Team Work



- What is a team?
 - “A group of people with a full set of complementary skills required to complete a task, job, or project.”
<http://www.businessdictionary.com/definition/team.html>
 - “A group is an intact social system, complete with boundaries, interdependence for some shared purpose, and differentiated member roles” [Hackman et al]
 - “A **team** is a group of individuals working together to achieve a goal.

A group does not necessarily constitute a team. Teams normally have members with complementary skills and generate synergy through a coordinated effort which allows each member to maximize their strengths and minimize their weaknesses.”

<https://en.wikipedia.org/wiki/Team>

How to achieve effective teamwork in the workplace?

- For a team to work effectively, the team should look at the group climate and the process in which they will complete their tasks.
- **Some effective teamwork practices:**
 - A priority and reward teamwork
 - Clarify roles, responsibilities, and accountabilities
 - Set clear goals
 - Communicate with each other
 - Make decisions together
 - Build trust and get to know each other
 - Celebrate differences/diversity
 - Examine and improve teamwork processes and practices

Are you good at teamwork?

Team Work

Activity

- In a small group (4-5 people around you) ...
 - Discuss amongst your group members and determine a team that you could form and which you would be good at...
 - This can be anything – a soccer team, rock band, a business start-up, ...



Team Work - Mistaken Beliefs

- **Great Individuals Make Great Teams** - Teams that work together harmoniously perform better than those with lots of conflicts.
 - “... grumpy orchestras played together slightly better than orchestras in which all the musicians were really quite happy”
 - <https://hbr.org/video/5566537368001/the-explainer-how-management-teams-can-have-a-good-fight>
 - <https://hbr.org/video/5542728022001/whiteboard-session-clashing-with-a-coworker-heres-what-to-do>
- **It is either Right or Wrong** - Team dynamics (right people in the right roles) are largely caused by the leader's style (authoritarian versus democratic).
- Larger teams perform better than small ones.
- Teams whose membership stays intact gradually deteriorate
 - “73% of the [airline] incidents ... occurred on a crew's first day of flying together”see <https://hbr.org/2009/05/why-teams-dont-work>

Team Work - Diversity

- **What do we mean by diversity?**
“the inclusion of different types of people ... in a group or organization”.
<https://www.merriam-webster.com/dictionary/diversity>
- We all have biases (explicit, implicit/conscious, and unconscious), assumptions, and generalisations.
 - We all respond without thinking...
 - Quick test...
- **Awareness of implicit bias.**
 - <https://www.youtube.com/watch?v=dVp9Z5k0dEE>
 - <https://www.projectimplicit.net/>
- **All teams are diverse and diversity matters.**
 - https://twitter.com/nke_ise/status/897756900753891328

Team Work - Successful Teams

Why are some groups successful?

Hackman identified three attributes of such groups

- They satisfy internal and external clients
- They develop capabilities to perform in the future
- Members find meaning and satisfaction

And then five factors that increase the chances for success:

- A real team (shared task; clear membership; stability; ...)
- Compelling direction (SMART goals?)
- Enabling Structure (size; internal structure; skills balance; ...)
- Supportive Context (reward; development; information; ...)
- Expert Coaching (support; mentoring; evaluation; ...)

[from Hackman] – see <https://hbr.org/2009/05/why-teams-dont-work>

Characteristics of effective and great teamwork

Great teamwork happens wherever great teams can be together.

Effective characteristics –

- Good communication
- Individual talent
- Team sense of belonging
- Strong leadership
- Clear structure
- Feedback
- Positive attitude
- Solution-focused teams

Team Work for IT Professionals

- Multi-disciplinary
 - e.g. business; IT; creative design; ...
- Multi-faceted
 - e.g. analyst; architect; coder, tester; ...
- Collaborative
 - e.g. coder; coder; coder; ...
- Traditional plan-and-document structures
- Agile such as SCRUM or XP
 - e.g. pair programming (why???)

<https://edubirdie.com/examples/the-importance-of-effective-teamwork-in-information-technology-and-the-computing-industry/>

Team Work for Students

- **Why are student research projects different from professional projects?**
 - Lack of fully shared fate
 - Different scope
 - Different goals
 - Different methodology
 - Not the whole work => Different schedules
- **How do you deal with these issues?**

Team Work - Successful Student Teams

Characteristics of groups that worked effectively:

- equal contributions
- full discussion of issues
- member support
- High quality result & high level of member satisfaction

Common problems that prevent groups working effectively:

- problems with logistics
- problems with allocation of tasks
- coordination of member contributions
- lack of commitment from some group members
- Quality of group product lower than individual product, & high level of stress and dissatisfaction

Team Work - Successful Student Teams

Strategies for improving group dynamics

- **Setting up the group:**

Positive organisational systems such as drawing up a team constitution and open discussion in the first meeting of your group can help the development of a good dynamic.

- **Dealing with differences:**

In universities today, most groups are going to include people from different cultural backgrounds. Again, open discussion and tolerance are key factors for success here.

- **Dealing with negative behaviour:**

Aggression, blocking, controlling, freeloading and discounting.

Team Work



Search for:

Team effectiveness
Self-managed teams
Group conflict
Team efficacy...



Learn about the theory of teams!

Sourcing IT Talent



How do
organisations
recruit IT
Talent?

Sourcing IT Talent

– Options include:

- Hire a recruitment company to source IT candidates
- Direct recruitment
- Permanent job offers
- Contract staff
- Outsource / local and international
- LinkedIn
- Consultancy
- Any others?



Source:Pageuppeople

Talent Sourcing Process

- Options include:**
- Creating a sourcing plan and strategy
 - Executing the sourcing plan and strategy
 - Vetting the talent pool
 - Moving qualified candidates through the talent pipeline

Key Challenges

What are
the key challenges of sourcing talent?



Differentiation



source:partnersinexcellenceblog.com



source:mscareergirl.com

Talent Sourcing Challenges

- **The common challenges in talent sourcing –**
- Attracting candidates with the right skills
- Finding the ideal candidate profile
- Building a strong employer brand
- Sourcing candidates proactively
- Ensuring your sourcing processes are fair and equitable



[Source: Listing down the key challenges facing the recruitment sector \(linkedin.com\)](#)

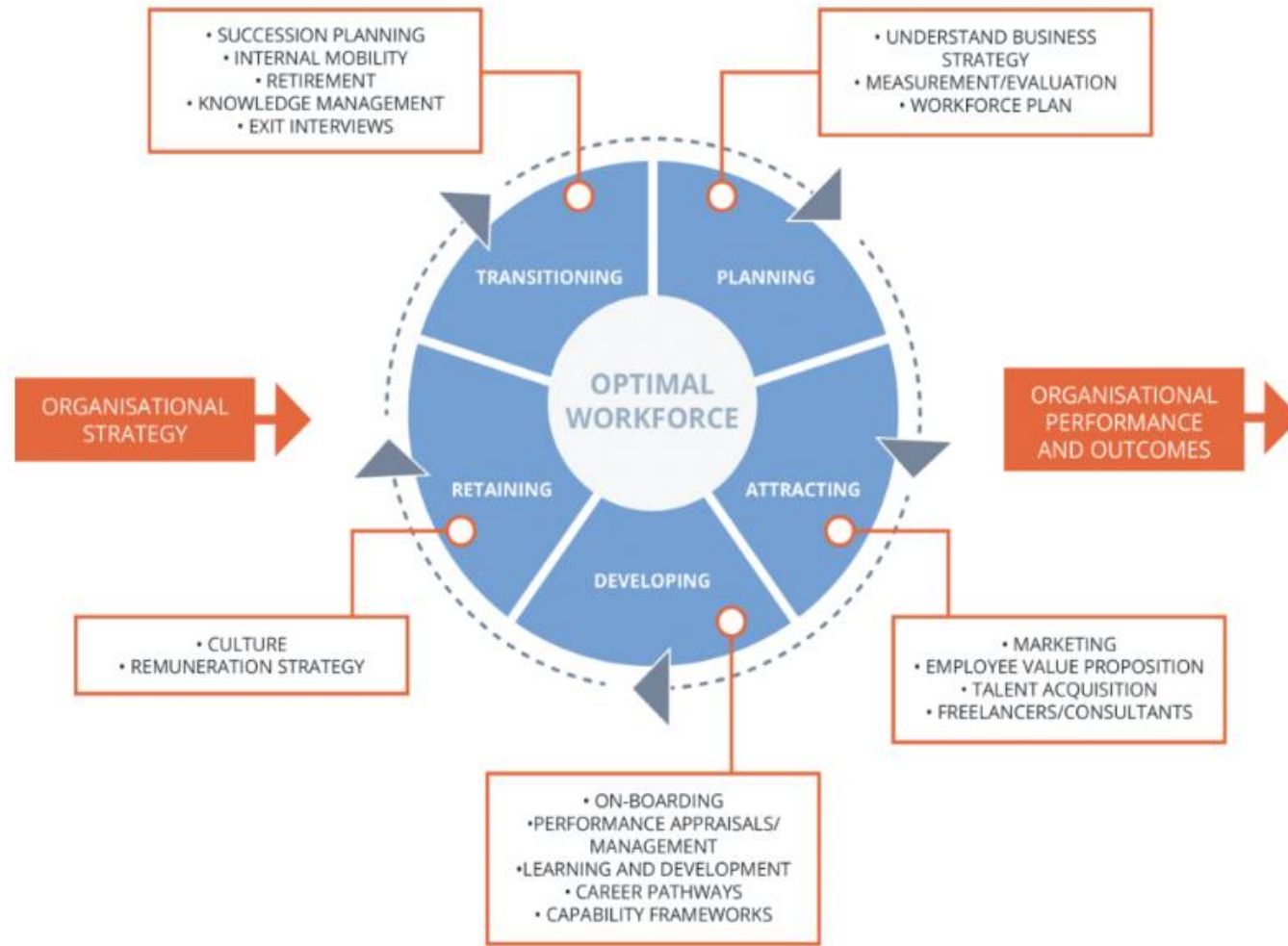
Managing IT Talent

Top strategies for managing IT Talent are:

- **Detailed Job descriptions**
 - Well-informed, detailed job description helps the sourcer, the sourcing software, and the candidate understand the job-role better
- **Person organisation fit**
 - Personal and organizational values need to have a certain degree of overlap for any employee to feel at home within the organization
- **Collaborate-coach-evolve**
 - effective involves creating a culture of coaching, mentoring (even reverse mentoring), and collaboration
- **Reward and recognising right**
 - goes beyond financial rewards and bonus packages
- **Opportunities for continuous improvement**
 - employees need to be equipped with the right tools to be able to maximize their own potential

Managing IT Talent

Talent Management Process Model -

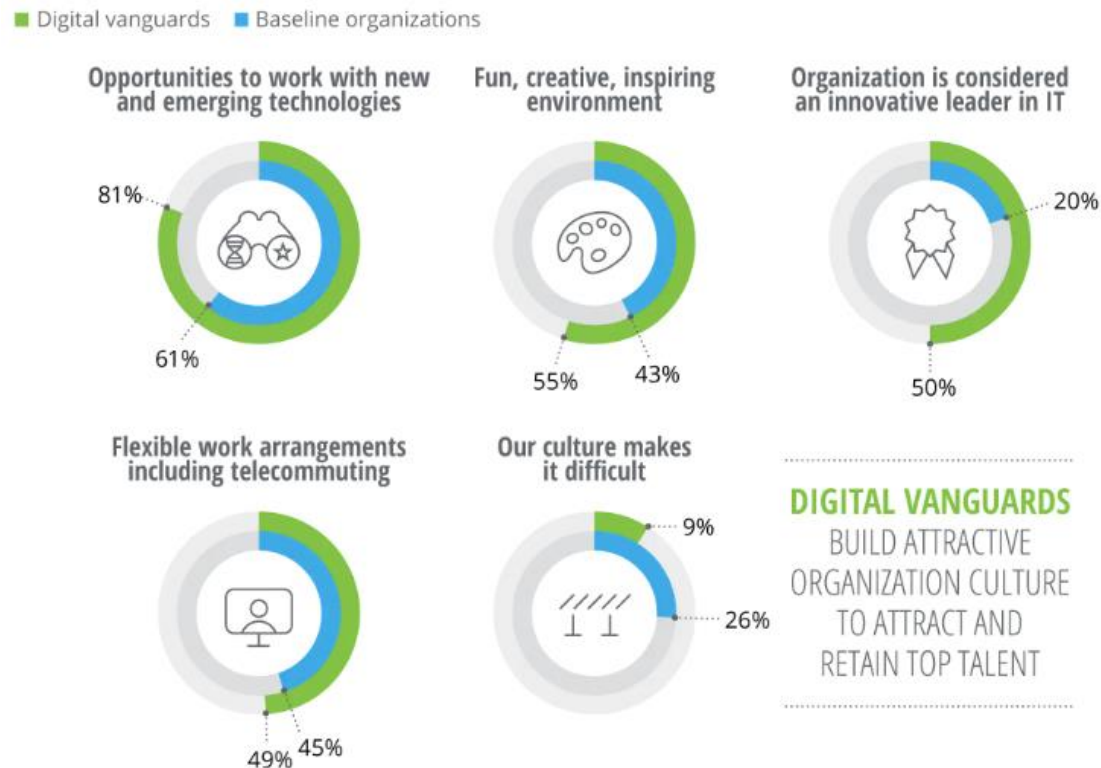


<https://www.valamis.com/hub/talent-management#:~:text=Talent%20management%20is%20a%20constant,company%20in%20the%20long%20run.>

Nurturing and Retaining IT Talent

A Deloitte survey showed organizational culture is fundamental in attracting and retention TOP IT talent and **strategies are:**

- Differentiate compensation based on performance
- Provide access to coaching and mentoring
- Offer job and career flexibility



N=898.
Source: 2018 Deloitte global CIO survey.

IT Recruitment Challenges - Australia

IT organisations across Australia continue to confront a range of recruitment challenges.

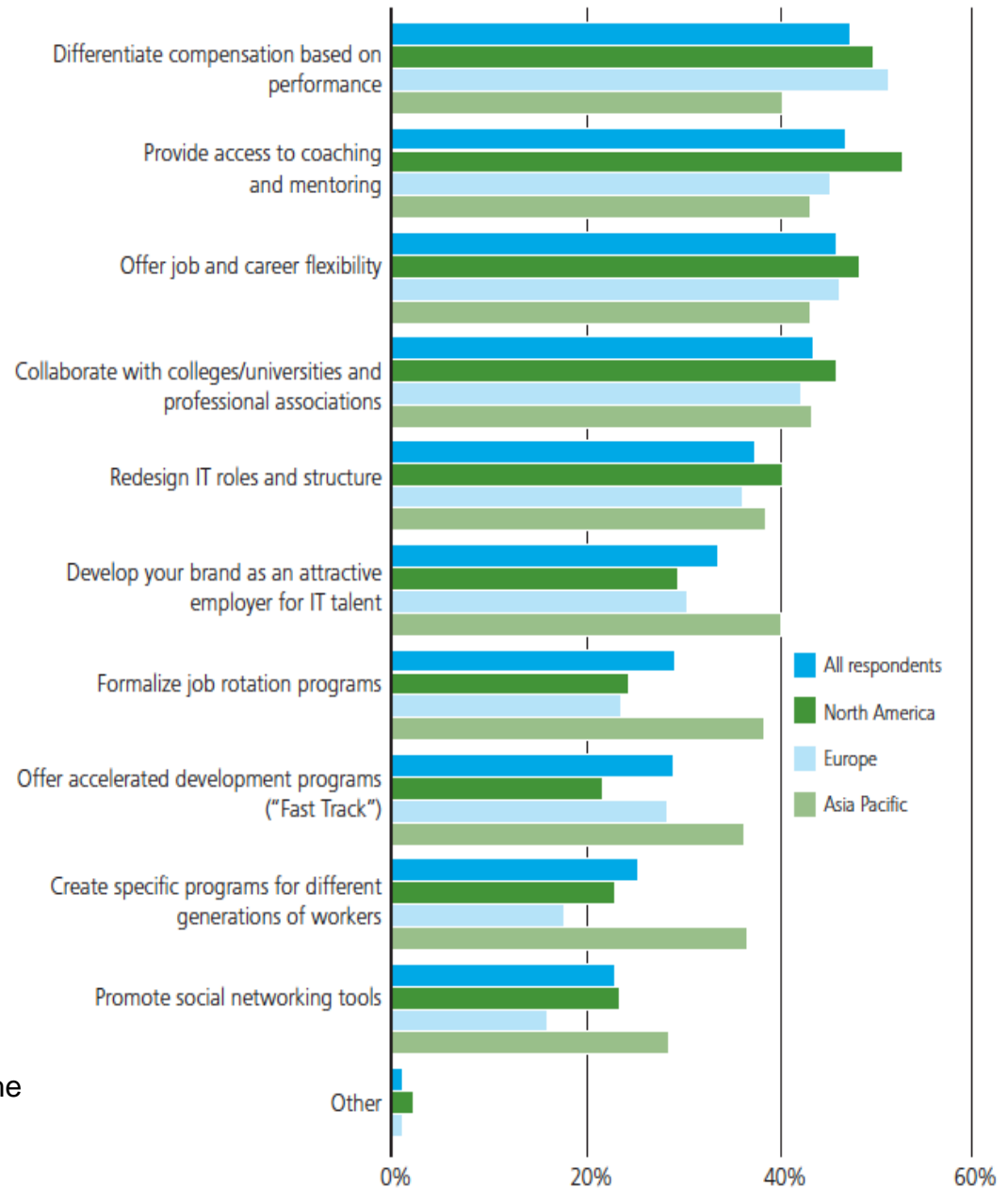
The three biggest recruitment challenges faced by IT organisations in Australia today –

1. Competitive pay (47%)
2. Attracting talent (33%)
3. Skills shortage (20%).

<https://www.hays.com.au/it/blog/-/blogs/the-challenges-in-recruiting-top-tech-talent>

What are your top 3?

Figure 11. Attraction and retention strategies in use by respondents



Source

<http://www.cio.com/documents/whitepapers/mindthetalentgap.pdf>

Your Career Development

How many hours have you spent planning your career over the last 12 months?



Source : Ryerson University

Do you know what you want to do in 2 years? 5 years?
Look at your strength and weakness area's !

Change Management?



2007 Copyright Prosci and Bill Cigliano

What about the
“people side”
of projects?

What is Change Management?

On a project level:

“Change management is a structured process and set of tools for leading the people side of change to achieve a desired outcome.”

(Prosci 2002)

**Change Management for IT vs.
Change Management for People**

**This is Organisational Change
Management (or OCM)**

On an organization level

A leadership competency for enabling change within an organisation.

A strategic capability designed to increase change capacity and responsiveness.

Reasons for applying OCM?

The number one obstacle to success for major change projects is:
employee resistance and the ineffective management of the people side of change

Impacts of NOT doing change management

The difference between project management and change management

Focus:

Technical side of moving from current state to future state



Focus:

People side of moving from current state to future state

Solution is designed,
developed and delivered
effectively
(Technical side)

+

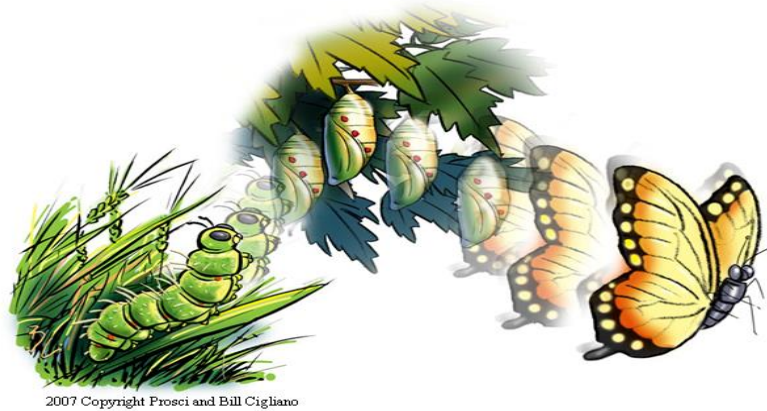
Solution is embraced, adopted
and utilised effectively
(People side)

= **SUCCESS**

Complementary disciplines with a common objective

Change is a process...

Where you
are today



Where you
want to be

The transition state
creates stress and
anxiety

Employees are
comfortable with
and prefer the
current state



Current
state



Transition
state



Future
state

The future state is
unknown or not
well understood

States of change



Utilising an organisational perspective...

Current

Transition

Future

Ad hoc processes → Documented and managed processes

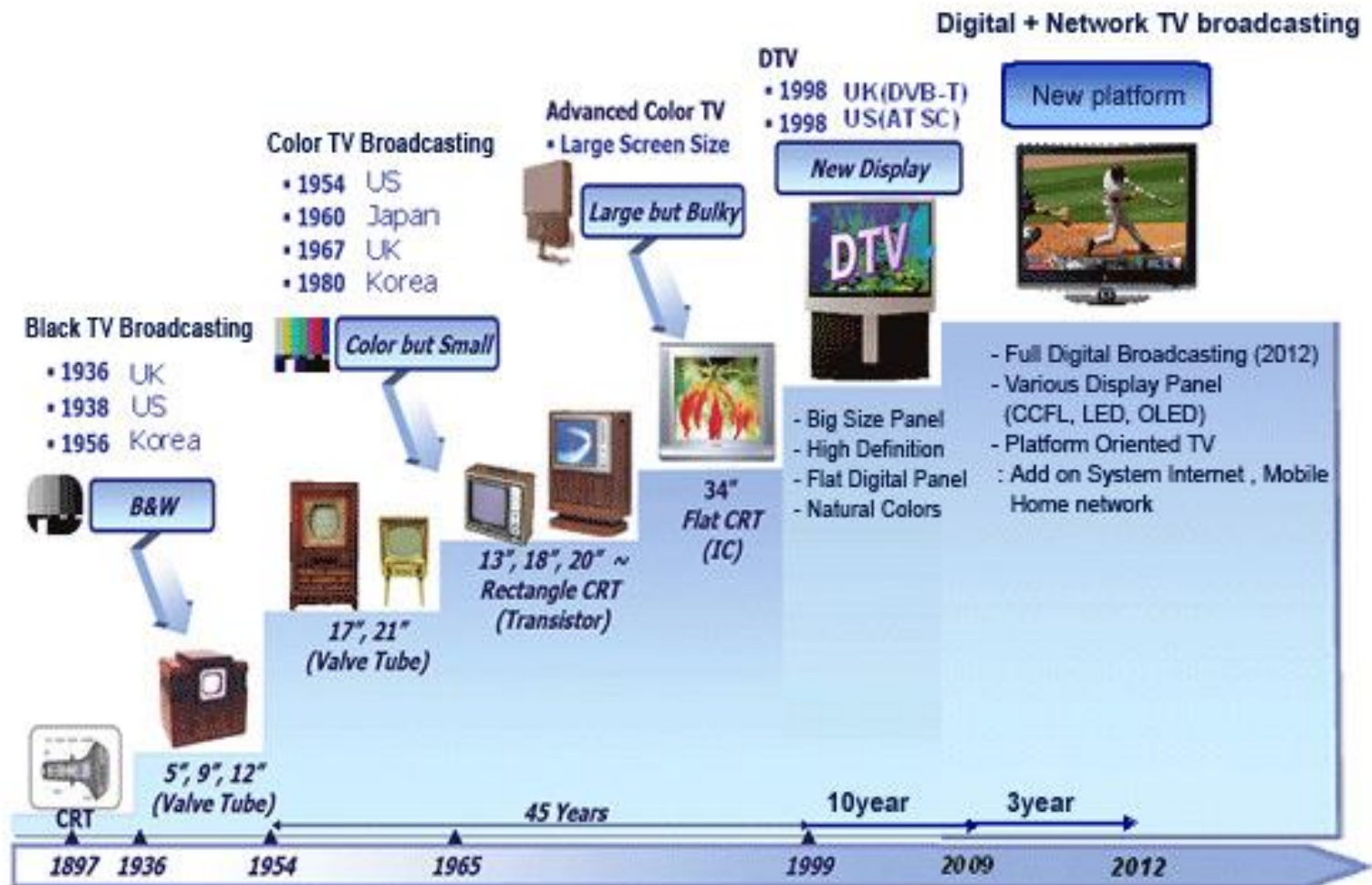
Old operating model → New operating model

Generalists in the call centre → Specialists in the call centre

No web interface for suppliers → Supplier website integrated into supply chain

Two different companies → Merged organisation

Another example



Source:techgeez.com

Why you should care?

- As IT Professionals, your work has implications and impacts beyond your immediate team
- By understanding your customers better and the impacts they face, you will deliver better quality solutions. More skills = more value = more marketability
- Evolution of IT from an 'order taker' to a strategic partner of the business



Key roles in Change Management

Employee-facing:

- **Executives and senior leaders** – fulfilling the role of sponsors of change
- **Middle managers and supervisors** – fulfilling the role of coach for their direct reports



Enabling:

- **Change management resource or team** – applying a structured approach and enabling others
- **Project team** – integrating the “people side” of change
- **Support functions** – providing expertise

Any examples of Change Management?

What has the impact been ?

(see Menti)



Source: ZdNet

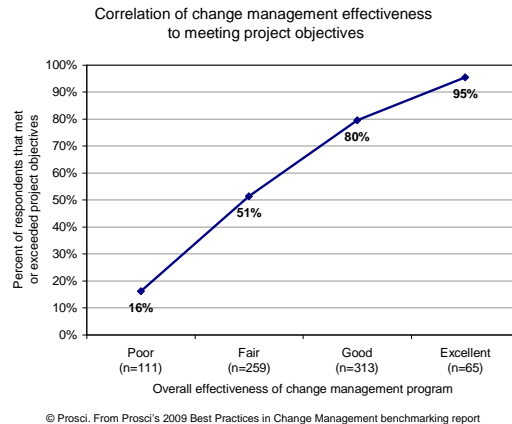


Source: Chicago Tribune



“Why” change management?

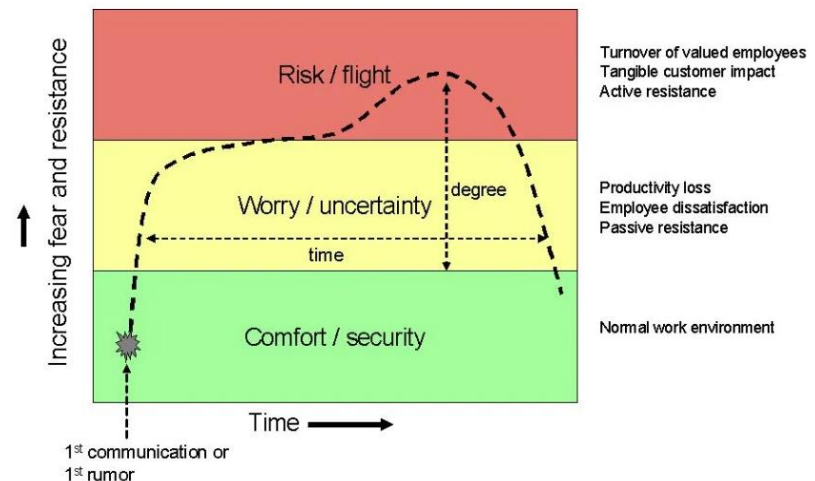
Three perspectives to think about...



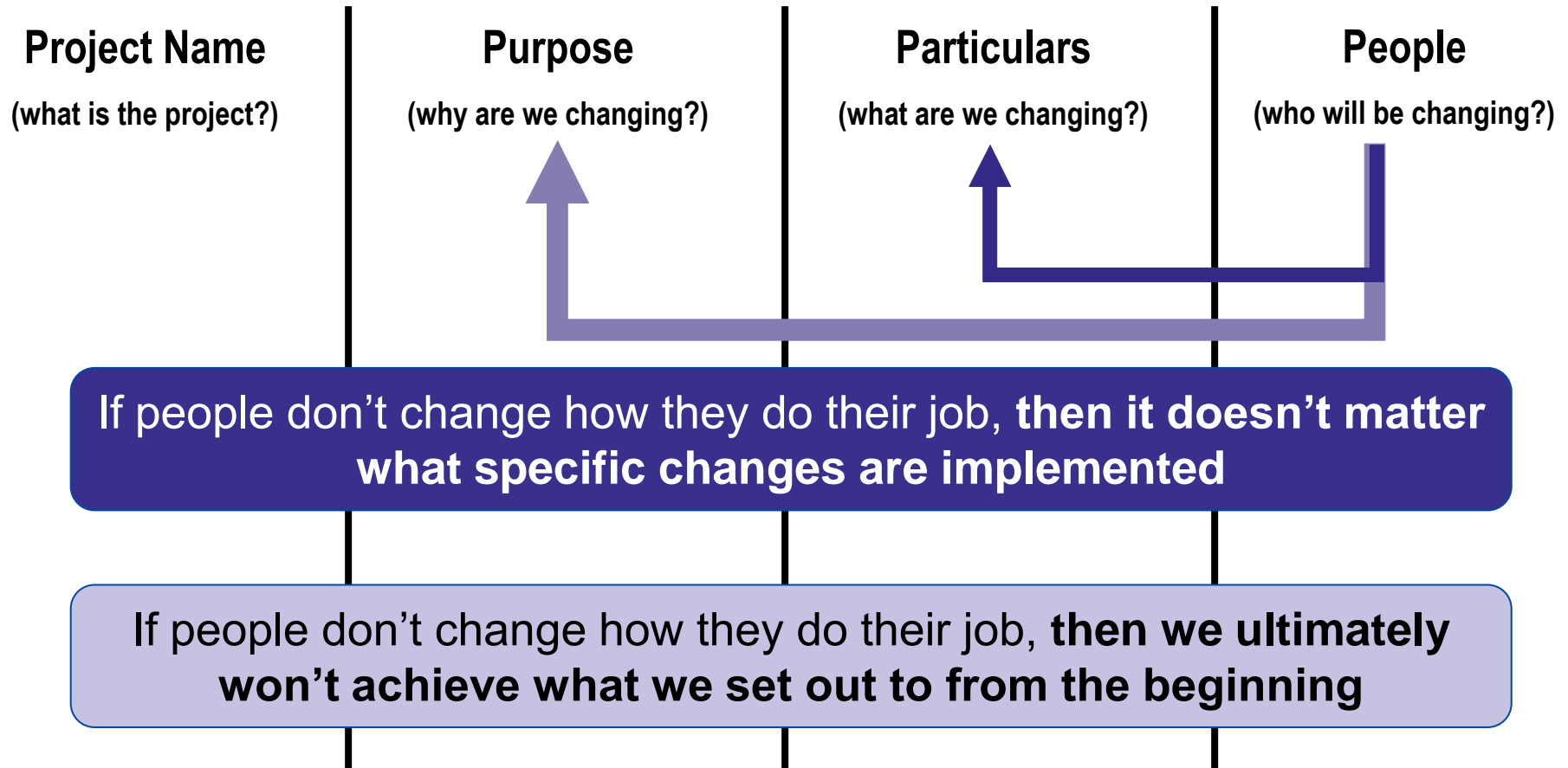
1. Connecting change management to business results

2. Mitigating negative consequences

3. Translating change management to financial performance

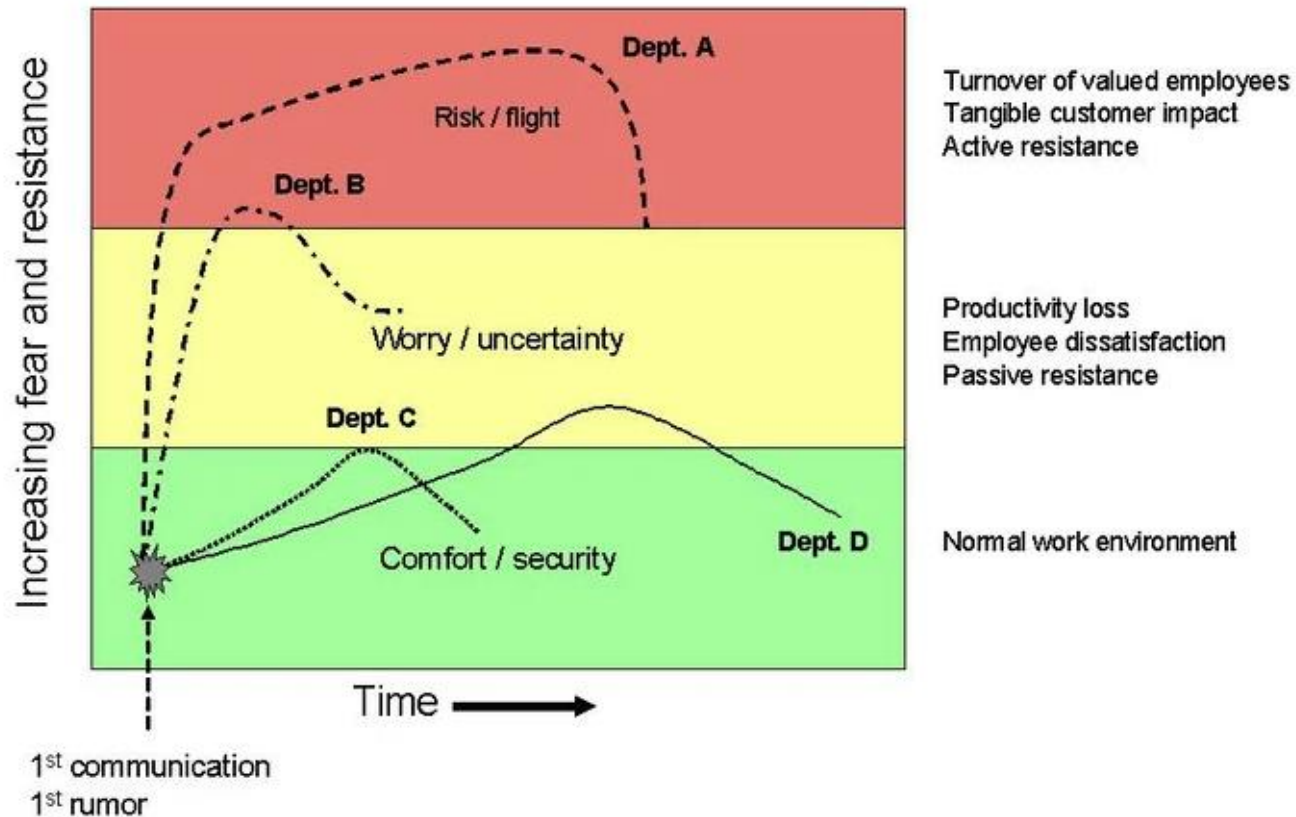


Connecting OCM to business results



Mitigating negative consequences

With poorly managed change, you can expect a bigger impact that will last longer



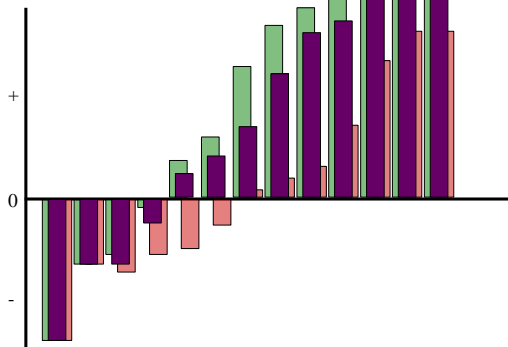
The reality is that change creates instability and introduces risk to the organisation. Multiple changes within the organisation aggravate and compound this risk

The degree of impact will vary by group and depends on the effectiveness of OCM work

With the change, you can expect a decline in productivity and an increase in resistance

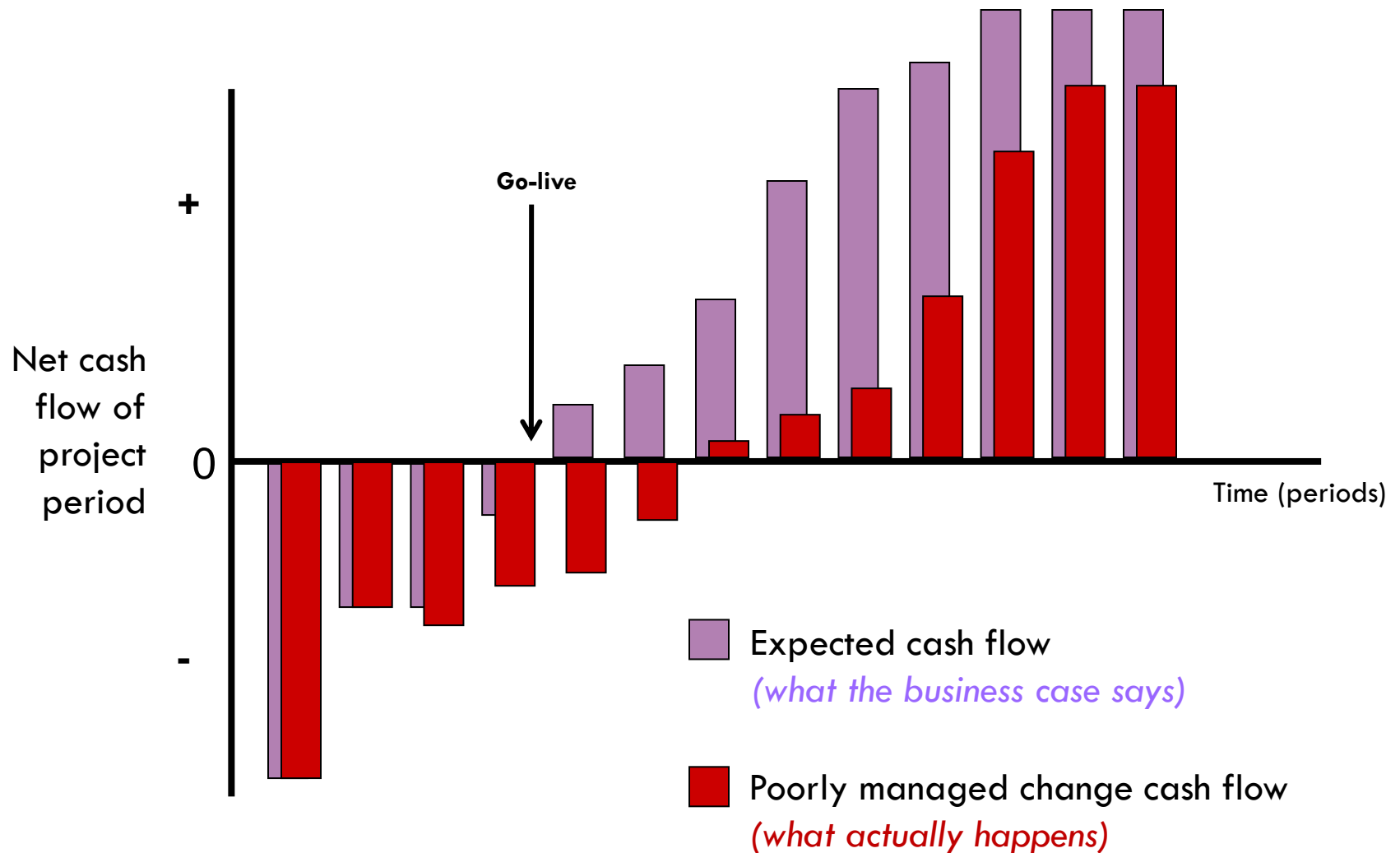
Translating OCM to financial performance – human ROI factors

- This "Flight Risk Model" reveals the cost avoidance of OCM:
 - **Productivity loss**
 - **Turnover**
 - **Customer Impact**
- What about the ROI (return on investment) of managing the people side of change?



- **Speed of adoption**
 - How quickly are people up and running on the new systems, processes and job roles?
- **Ultimate utilisation**
 - Of the total population, how many employees are demonstrating “buy-in” and are using the new solution?
- **Proficiency**
 - Are individuals performing at the level expected in the design of the change?

Expected returns vs. poorly managed OCM



OCM models

- Diverse approaches / Models
 - Focus on business impacts
 - McKinsey 7S
 - Linking of business and people
 - ADKAR
 - Focus on employee responses / needs
 - Kotter
 - Kübler Ross
 - Focus on sequencing
 - Lewin
- Participatory: Design *for* users with their input
- Co-Design: Design *with* users
- Sources
 - <https://www.designforsocialchange.org/journal/index.php/DISCERN-J/article/view/3>
 - https://www.tandfonline.com/doi/full/10.1080/15710882.2019.1581817#_i6
 - <https://www.lucidchart.com/blog/7-fundamental-change-management-models>
 - <https://www.mindtools.com/aicks4s/the-mckinsey-7-s-framework>

McKinsey 7-S Model

- 7-S model in a wide variety of situations
- The model categorizes the seven elements



The ADKAR[®] Change Model

The five building blocks for successful change

Awareness

- Of the need to change
- Of the nature of the change

Desire

- To support the change
- To participate and engage

Knowledge

- On how to change
- On how to implement new skills and behaviors

Ability

- To implement the change
- To demonstrate performance

Reinforcement

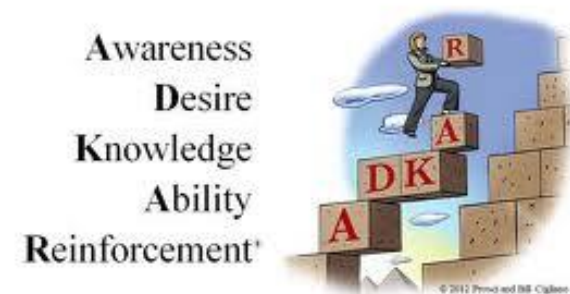
- To sustain the change
- To build a culture and competence around change



See <https://www.prosci.com/adkar/adkar-model>

Your change journey...

- Think about a recent change you have been involved with
- Can be personal or business related
- Was it a favorable experience (or not) as a result?



The Psychology of Change

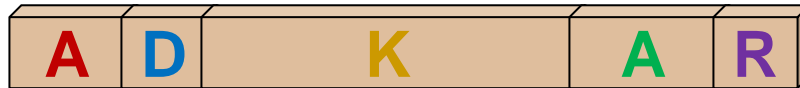
Theories and perspectives

1. Change agents must be conscious of both a senders' mentality and the receivers' orientation.
2. Employee resistance is the norm, not the exception. Expect some to never support the change.
3. Visible and active sponsorship is not only desirable but necessary for success.
4. Value systems have a direct impact on how employees react to change.
5. The size of the change determines how much and what kind of change management is needed.
6. The “right” answer is not enough to successfully implement change.
7. Employees go through the change process in stages and go through these stages as individuals.



Not everyone changes at the same pace

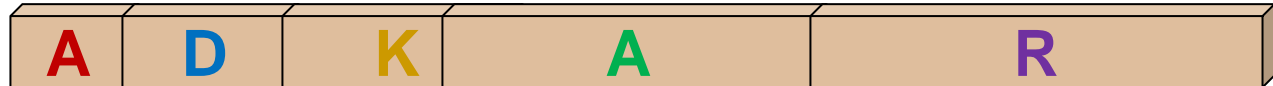
Person A



Person B



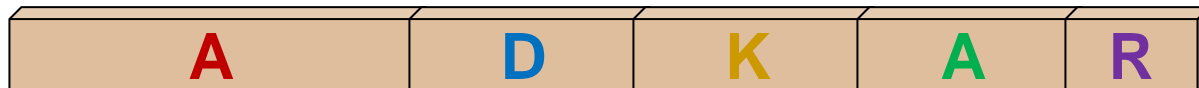
Person C



Person D



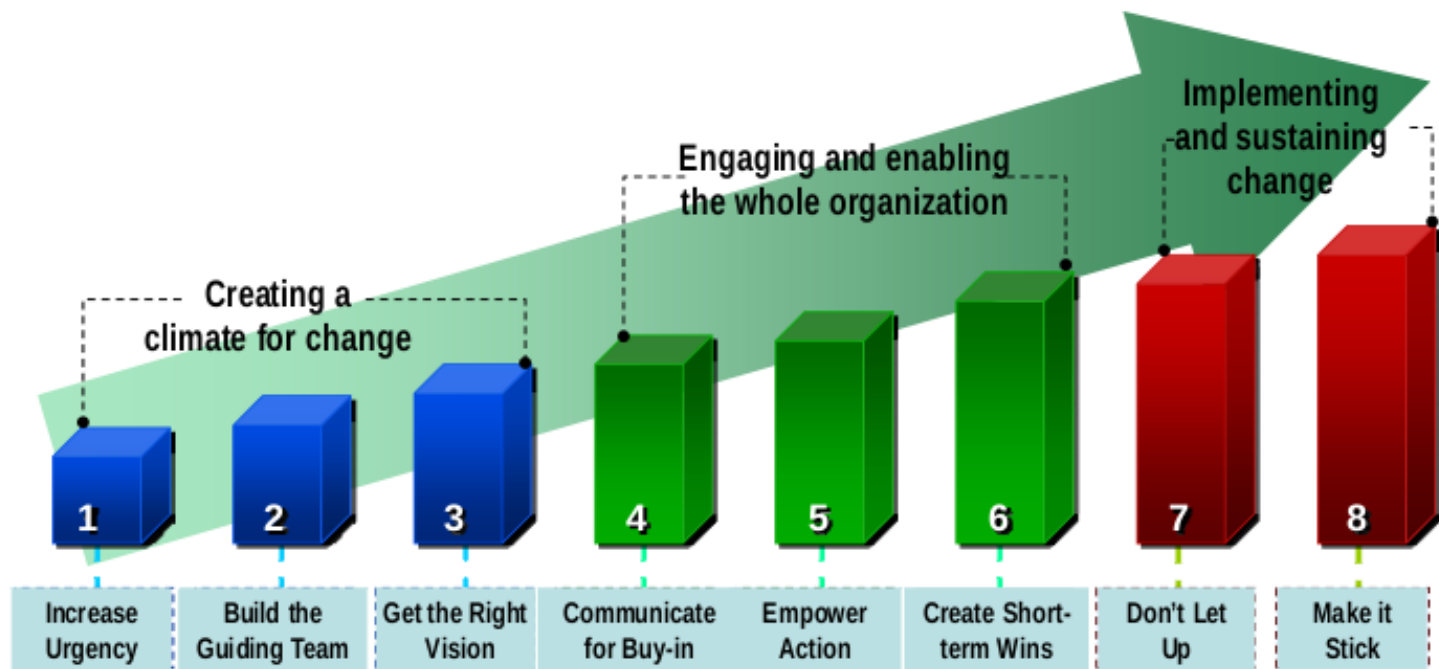
Person E



Person F



John Kotter's 8 Step Change Model



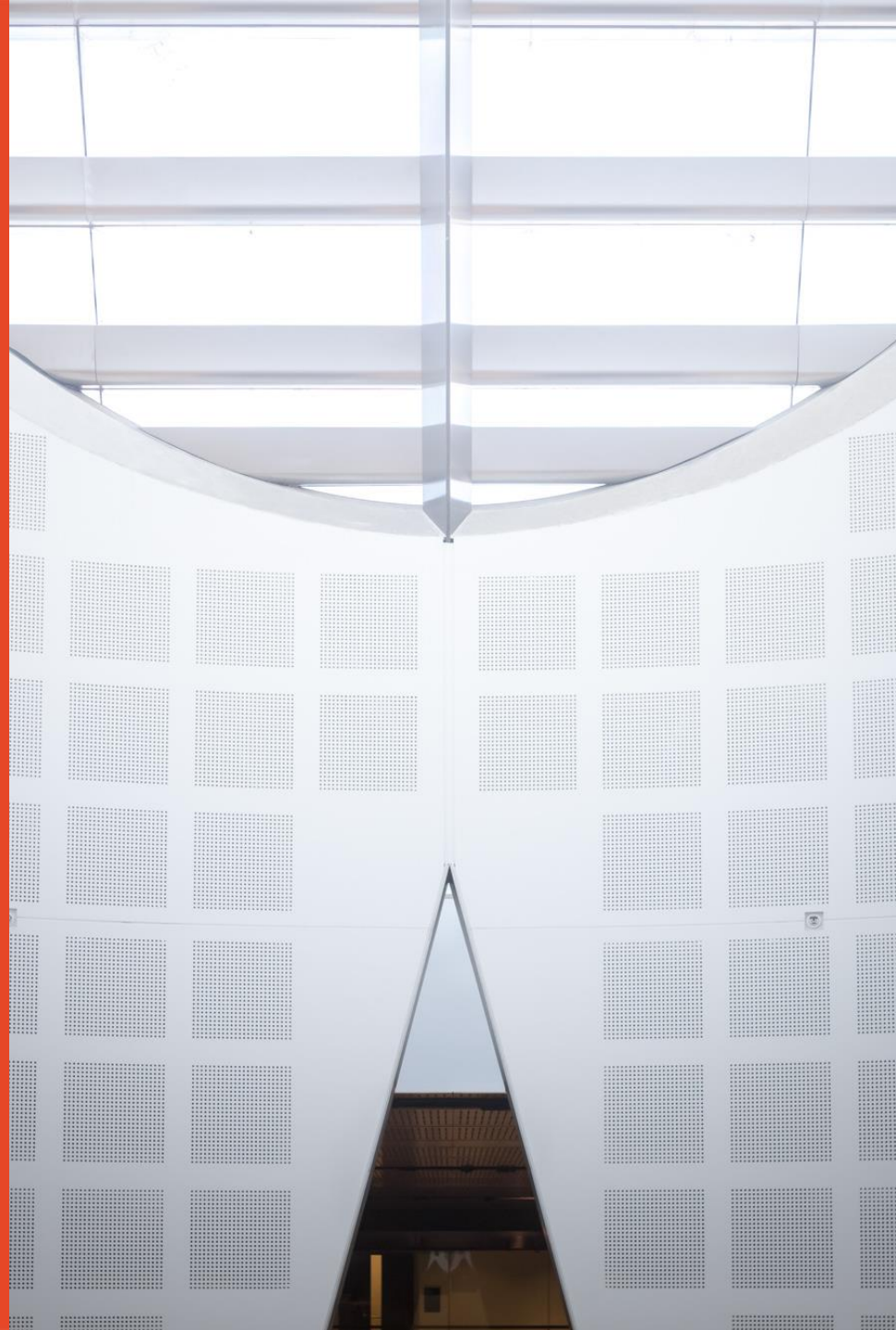
⁵ Kotter, John P. and Cohen, Dan S. The Heart of Change. Boston: Harvard Business School Press

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Week 4: Project Success and Failure



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Standish Group's Chaos Report

<https://www.projectsmart.co.uk/white-papers/chaos-report.pdf>

“71 percent of software projects will be challenged or fail”.



“When a bridge falls down, it is investigated and a report is written on the cause of the failure. This is not so in the computer industry where failures are covered up, ignored, and/or rationalised. As a result, we keep making the same mistakes over and over again”.

Why do projects fail?

- Case studies (you should explore these...)
 - California DMV
 - FoxMeyer ERP
 - NZ Police INCIS project
 - Sainsbury's warehouse automation
 - Queensland Health payroll
 - Australian Customs cargo service
 - Victorian MyKi public transport smart card
- Why did they “fail”?
- When/Where did they fail?

Why do projects fail?

“Failure is almost never obvious until you’re looking in the rearview mirror”

- See <https://www.oreilly.com/ideas/the-critical-role-of-systems-thinking-in-software-development>
- Borneo sprayed with DDT to kill mosquitoes
 - Reduced malaria by killing mosquitoes
 - ... but roofs started falling in

Tragedy of Commons

- See <https://www.investopedia.com/terms/t/tragedy-of-the-commons.asp>

Why did they “fail”?

When/Where did they fail?

Why is this important?

- Case studies (you should explore these...)
 - Therac-25 (1987)
 - Counter issue, along with multiple other causes...
 - Ariane-5 (1997)
 - Data conversion from 64bit to 16bit
 - HeartBleed (2014)
 - Networking heartbeat – requesting large data payloads creates security leak
 - NorthEast Blackout (2003)
 - Software race condition
 - Denver Airport Baggage Handling (1994)
 - Unclear requirements
- California DMV
- FoxMeyer ERP
- NZ Police INCIS project
- Sainsbury's warehouse automation
- Queensland Health payroll
- Australian Customs cargo service
- Victorian MyKi public transport smart card
- ... and many many more

Case study

- Therac-25
 - Medical radiation therapy machine.
 - Mid-1980's : At least 6 accidents of massive overdose of radiation, and at least 3 deaths.
 - Subsequent commission found:
 - Primary reason: bad software design and development practices
 - Code was not independently reviewed
 - No analysis of possible failure modes
 - Poor documentation of error codes, and ability to override
 - Q: Should the programmers have been held criminally liable? Why?
 - Q: How do you avoid hubris?

Case Study

- Queensland Health Payroll system
 - Started as a \$6.2M contract in 2007
 - Then evolved into a ~\$100M contract
 - Ended as a \$1.25B failure
- See
 - <https://blog.beyondsoftware.com/the-queensland-health-payroll-fiasco>
 - <https://www.henricodolfing.com/2019/12/project-failure-case-study-queensland-health.html>
- Why?

What about project success?

- Case Study: M&B - Mitchells & Butlers
 - ~1 600 pub/restaurant venues
 - Diverse systems: supply chain management; labour scheduling; finance systems; property management; ...
 - Complex legacy technology
- Redeveloped the entire IT infrastructure
 - Clarity of vision and intended outcomes
 - Careful migration planning
- See
 - <https://www.cio.com/article/198369/m-b-chains-get-hosted-infrastructure.html>
 - <https://www.open.edu/openlearn/mod/oucontent/view.php?id=47638&printable=1>

Q&A



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