PMI®
ADELAIDE, SOUTH AUSTRALIA

NAVIGATING AND MANAGING PROJECTS IN THE ERA OF TECHNOLOGY DISRUPTION

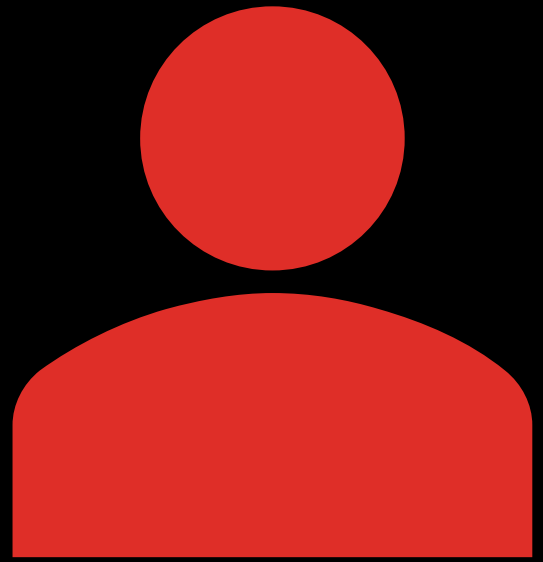
INTRODUCTION

- Thanks for coming!
- We will be covering a fair bit of content
- Discussions and questions welcome!

CONTENTS

ABOUT ME

- Over 10 years of professional experience in the private and public sector;
- Large-scale enterprise application development and roll-out experience (as a programmer and project manager);
- SAP Certified Project Manager;
- Waterfall and agile implementation experience;
- Domains including: Social Services, Financial Systems, Claims Management, Compliance, Debt Recovery, and Health;
- Current Role: Principal Consultant at Pernix Pty. Ltd.
- Previously held roles such as: Programme Director, Technical Director, Senior Programmer, Senior Business Systems Analyst, Operations Manager, Project Manager.



ABOUT PERNIX

pernix
smarter with data™

Pernix is an experienced data focused organisation with coverage across Australia, New Zealand, Japan and the USA. We provide end-to-end data solutions aimed at driving better business and sporting outcomes.

We are industry leaders in data sourcing, capture, harvest, transformation, analysis and interpretation blended with deep operational experience in:

- Data Warehousing & Business Intelligence
- Enterprise Application Integration
- Advanced Analytics & Data Science
- Visualisation & Mobile Reporting
- Data Advisory & Governance
- High Performance Sports Analytics
- Spatial Science, Catastrophe Risk & Catastrophe Modelling

Pernix combines our analytical skills with deep business advisory as part of the Cullinan Group, laterally leveraging specialists who help clients transform their business with over 18 years experience in concept to commercialisation, information management, process design and business operation, turning data into insight and action.

Pernix wins International Award

Cully (W) Cullinan · Following
Chairman
2 articles

Pernix, an Australian High-Performance Sports and Data Analytics business, has beaten strong international competition to take out 1st-place in the Leeds United Football Club Inaugural Sports Tech competition.

cullinan GROUP

Australia China Business Council
澳大利亚中国工商业委员会

aiia
australian information industry association

TECHNOLOGY PARTNERS

- Informatica – #1 in Data Quality, Integration, Data Exchange, Master Data management, Enterprise Information Catalogue, Data Governance & ultra messaging platforms.
- AWS & Microsoft - On-demand cloud computing platforms and Pernix Marketplace offerings
- Salesforce – Customer Success platform & App Marketplace
- ESRI – GIS Mapping, Spatial Data and Location Analytics
- Adobe – Digital Presentation & Experience Mgmt.

- Cisco/Fortinet - High Density WIFI & Internet of Things Data Capture Platforms
- Power BI, Yellowfin, Zoomdata & Tableau – Visual Analytics, dashboard, reporting and data insights
- MapR – Converged Big Data Platforms
- Extrahop – AI Driven Security Analytics, leveraging real-time wire data insights
- Oracle – Integrated Cloud Applications and Platform Services
- Splunk – SIEM, AIOps, Application Management, Log Management, IoT & Industrial Data Integration platforms

- Megaport - Scalable bandwidth for public and private cloud connections, metro ethernet, and Data Centre backhaul as well as Internet Exchange Services.

- TPG – Dark Fibre, Ethernet, IP Transit, SIP Voice, Data Centre Services

- Arrow, Tech Data, DNA Connect, Synnex, Dicker Data - Distribution partnerships covering sensors, endpoint devices and more

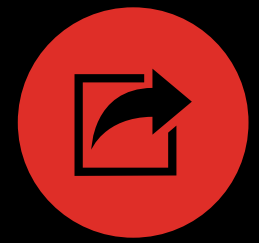
TECHNICAL PROJECT MANAGEMENT

YOU NEED TO HAVE ENOUGH TECHNICAL KNOWLEDGE OF THE PROJECT ACTIVITIES, BUT YOU DON'T NEED TO BE AN EXPERT.

WHETHER YOU'RE MANAGING AN ICT PROJECT, A RETAIL FIT-OUT, OR A NEW GAS PIPELINE, THE PRINCIPLES ARE THE SAME. YOU SHOULD BE AWARE OF THE MATERIALS REQUIRED, THE POTENTIAL PROBLEMS, SOLUTIONS, AND VARIOUS TESTING METHODS.

LACK OF UNDERSTANDING MAY LEAD TO DIFFICULTIES UNDERSTANDING DETAIL AND MAKE IT DIFFICULT TO EFFECTIVELY MANAGE THE PROJECT.

UNDERSTANDING HELPS WITH PERFORMANCE MANAGEMENT, GOVERNANCE, LIFECYCLE MANAGEMENT, RISK MANAGEMENT, TIME/BUDGET/COST ESTIMATION, ETC.



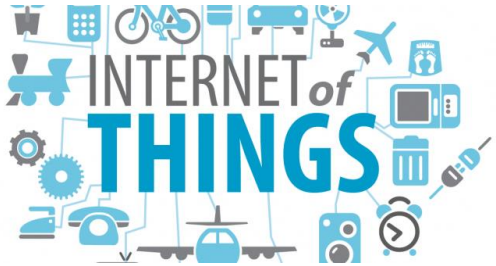
DO PRESALES TRAINING TO QUICKLY GET UP TO SPEED.

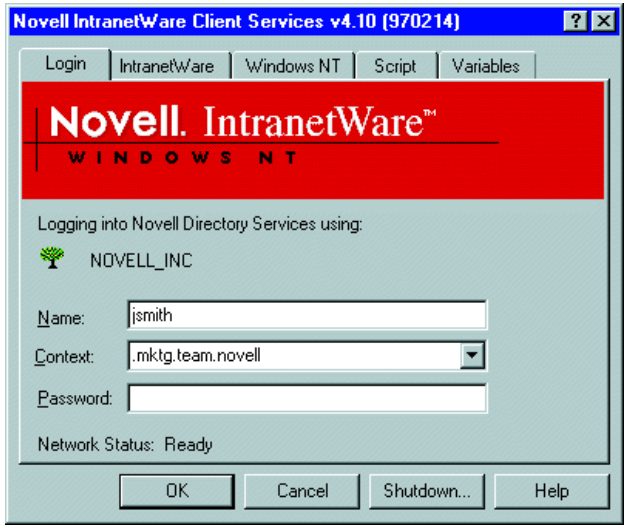
DISRUPTIVE TECHNOLOGY

- Displaces an established technology and "shakes things up" or is a ground-breaking technology that creates a new industry.
- Can also use the term "disruptive innovation" – displaces an established business/practice/material/etc.
- "Disruptive Technology" coined by Clayton M. Christensen in 1997 in his book "The Innovator's Dilemma".
- Some examples:
  - **The Personal Computer:** Typewriter, fundamentally changed business practices and communication;
  - **Email:** Communication, letter-writing, greeting-cards, etc.
  - **Mobile Phones:** The telecom industry.
  - **Smartphones:** The mobile phone industry, GPS devices, mp3 players, digital cameras, etc.
  - **Cloud computing:** In-house and on-premise infrastructure, as-a-service offerings.
  - **Social networking:** Instant messaging, event planning, telephone, email, social, etc.
  - **Streaming services:** Traditional video-rental stores (blockbuster, etc.)
  - **Online Shopping:** Retail sector
  - **Crypto Currency:** Fiat Currency

Cloud

SO WHAT'S CHANGED?





TECHNOLOGY MOVEMENTS

- **1994:** Sony PlayStation
- **1996:** The DVD
- **1996:** Dolly the Sheep
- **1997:** Nokia 9000 Communicator (Internet capable mobile device)
- **1997:** Toyota Prius – first mass-produced hybrid
- **1997:** Fujitsu's 42-inch plasma screen (largest available at the time)
- **1998:** First digital cameras released. No more going to the chemist to get photographs developed!
- **1999:** The term "Wi-Fi" is coined and becomes the standard (began in 1997).
- **1999:** Java 2, Enterprise Edition (J2EE)
- **2000:** The first USB flash drive is invented.
- **2000:** Broadband services are starting to be purchased by home-users.
- **2001:** First iPod is released.
- **2001:** Wikipedia is founded.
- **2001:** BitTorrent is invented.
- **2001:** Agile Manifesto.
- **2007:** Amazon releases Kindle (e-book)
- **2007:** Apple releases the first iPhone.
- **2009:** BitCoin cryptocurrency is released.
- **2010:** Apple releases the first iPad.
- **2010:** 3D TV starts to become widely available.
- **2010-Onward:** Cloud technologies, "as-a-service" offerings, explosion of "frameworks", "Web 2.0", HTML5, RESTful services focus, etc.
- **Long-term tend:** Cheaper hardware (especially storage), expensive people. Move away from mainframes into modern platforms.
- **Even in the past 8 years, there has been so many changes it can be hard to keep up!**

SO WHY DOES IT MATTER?

- Many organisations and governments are looking to implement new technologies and ways of doing things to meet community expectations.
- “Agile” projects and methodologies are becoming the de-facto “standard” within many sectors.
- In the private sector, many businesses are implementing new technology to maintain competitive advantage, or to keep up.
- New technologies make things easier to do, with TCO and TCD and TTM being a large focus.
- Business automation is a key focus, reducing business overheads.
- Big data and machine learning are providing greater business insights, there’s a reason why data scientists are in great demand.
- As-a-service offerings can rapidly expedite project activities.
- You need to understand what is out there and how it is impacting your sector.
- Organisational Change Management is an important part of all projects, especially large transformational pieces.

THE "LATEST AND GREATEST"

- Big Data, Artificial Intelligence (AI) & Machine Learning (ML), ChatBots, Block Chain and Cloud are all hot-topics at the moment, and have been for a while.
- Many organisations are investigating these technologies – but they're not as complicated as they seem.
- These technologies have been around for quite some time now and there are many resources available that can give you a quick overview and plenty of deep-dive resources available too.
- There are many different vendors and software packages available, but they all fundamentally have to do the same thing.
- Keep in mind that the same computer science problems that "old" platforms solve, still have to be solved in new ones!
- Fundamentally, enterprise architecture and applications architecture hasn't changed all that much. You still need somewhere to save your data/transaction (a database), somewhere to process the data/transaction (an application layer), and somewhere for users to interact with that process (a view / GUI layer).

BRIEF INTRO: BLOCK CHAIN

- A distributed public ledger of any type of information;
- Not just about Cryptocurrencies, however they're implemented using the technology;
- Formed using a peer-to-peer network (stored in lots of places);
- Identity of everyone involved is anonymous;
- Consensus protocols reward people that "participate" in the chain (mining);
- Information is always "true" as special "codes" (known as hashes) show if anything has been changed when it shouldn't be;
- It means you can inherently trust all transactions that are performed;
- Distribution and decentralisation makes it arguably more efficient and cost effective, and provides greater security;
- Transactions are "confirmed" by thousands of peers, meaning that you can't "lie".

BRIEF INTRO: CHAT BOTS

- A program that "chats" with users and can help users with different tasks, such as answering questions – or performing transactions;
- Many frameworks available: Google, Microsoft, Amazon, etc.
- Many platforms supported: SMS, Facebook Messenger, WhatsApp, WeChat, Skype, custom chats, etc.
- Driven by large datasets and uses machine learning to help improve.
- Needs to be "taught" what the right things to do are.
- Siri, Alexa, and "Ok Google" are examples of advanced chatbots (or virtual assistants).
- Many businesses are implementing chatbots to assist users with FAQs, or to perform basic transactions;
- Can fully integrate with back-end systems to facilitate end-to-end business transactions.

BRIEF INTRO: BIG DATA

- Is a fairly ambiguous term that has been a buzzword over the past few years.
- Essentially is an increasingly large dataset/s that can be used to mine for information, and to gain greater insight.
- There are plenty of tools and platforms available that are used for “big data”.
- Big data is all based on context, for you, your sector, and your organisation.
- Some companies use big sets of unstructured data to gain greater insights into customer behaviours and to influence business decisions.
- Hadoop and MapR are examples of filesystems that are designed for big data processing.
- Big Data really isn’t scary. Traditional “transactional” systems still need to be in place, and usually don’t run on platforms designed for big data.

BRIEF INTRO: AI / ML

- AI is a really broad term and has many different applications. Way too broad to cover here. Different mechanisms have been in place for over 30 years.
- Machine Learning is a form of AI implementation.
- For example, image recognition is an implementation of ML.
- Essentially, it's a program/system that is designed to learn on it's own – with additional support where needed.
- Many ML implementations need "training" first, datasets that "teach" the algorithms what they need to know. This is reinforced through more data, and future learnings.
- Chatbots use ML to improve themselves.

CHALLENGES PROJECT MANAGERS FACE

- Old vs. New:
  - Oracle/IBM/SAP stacks, in-house architecture : cloud-based deployments, SaaS
  - Long-running projects where specs were written before code : light-weight frameworks, rapid prototyping, user-centred design
  - Deployment specialists and rigorous manual tests : automated build and deploy, automated testing
  - Etc.
- Keeping up with the pace of change
- Architectural stacks can contain additional complexities (hybrid cloud, big data platforms, etc.)
- New ways of doing things, lots of different opinions, lots of different methodologies (Scrum, Kanban, SAFe, DevOps, etc.)
- Traditional roles are changing (project managers, testers, developers, etc.).
- Data privacy and breaches, ethical discussions, etc. (e.g. Cambridge Analytica)
- European GDPR – The General Data Protection Regulation
- Australia new data breach laws – be aware of them!
- And more…

SOME TIPS TO ADDRESS CHALLENGES

- Look for multiskilled (full-stack) engineers, or however it relates to your discipline.
- Iterate for value and testability, and often.
- Utilise frameworks and promote TDD.
- Invest in automation: builds, deployments, tests, the coffee machine, etc. Automation is essential.
- Have a people focus. Your people have to keep up with change too; this is especially important in larger organisations, smaller organisations / start-ups often work differently.
- Don't try and be the next Google, Facebook, Amazon, Netflix, etc. They have their own challenges (well documented) and those companies are culturally different (normally). Take inspiration from success and use it to model your own management styles and techniques.
- Be wary of vendors and magic potions. Often these are actually snake-oil. But sometimes if it sounds really good, it can be because it actually is! Some of the latest platforms and developments are simply amazing.
- Always go back to the business **value** and what actual use-cases are being addressed. If in doubt, go back to the business case / project rationale!

MORE TIPS

- Be wary of certifications, always interview with due diligence. The pace of technology change means that new versions are coming out all the time; certifications can quickly become out of date.
- Build an entourage. Find techos, architects, testers, analysts, engineers, project managers, tradespeople, etc. that you trust will give you good and impartial advice.
- Don't think you have to be the expert on everything.
- In general, do not mix methodologies (e.g. Scrumban), however do what works for you and your teams.
- Train your people!
- Let things go, and work on things over time – rituals are hard to get right.
- Encourage your team to take ownership.
- Empower teams to hold each other accountable.
- Understand that using new frameworks, tools, languages, etc. **takes time**. Organisations and projects need to invest in upskilling their workforce and training their teams.

NEW TOOLS, NEW METHODS? COLLABORATION IS KEY

- Do we JIRA? Trello? BitBucket? Slack? Spark? WeChat? Jenkins? Yammer? Sharepoint? Etc.?
- The answer is Yes.
- **But**, there are so many different tools on the market that do different things – so which one do you pick?
- Pick ones that make sense for your team and fit into the organisational culture and complement existing toolsets.
- Each tool is used for different things, and pick the right tool for the right job. Don't try and force tools to do things they aren't fundamentally designed for.
- Describe the benefits to your team, and get them to be responsible and accountable. You need to demonstrate the value of using the tools to reduce/avoid resistance.
- It is important for you as a PM to be aware that these tools exist, and how they should be used.
- Unsure? Reach out and ask for advice!

REMEMBER

Good project management practices, people management, leadership, and governance are still the best drivers and enablers of project success.

LET'S TALK AGILE

- Everybody seems to want to "do agile" these days.
- A family of methodologies:
  - XP
  - SCRUM
  - Lean
  - Etc.
- Wrapped up into the Agile Manifesto.
- Let's not get too stuck on methodologies, but they are important.
- Agile can only work at the level an organisation allows it to. This level may be enterprise wide, localised, or just at the development/programming level.
- My experience: running teams at the ICT implementation point in an agile-way, but project managing the broader initiative using "traditional" methods (Waterfall SDLC, etc.)
- Each methodology has different degrees of support for different parts of a project lifecycle.
- Choose based on your project size, the effort involved, company culture, criticality, what infrastructure is in place, the size and quality/capability of the team, and are requirements going to change often?
- Multidisciplinary teams.
- Agile is arguably more difficult to do than other methodologies as it requires a high level of **maturity**.

SCALING AGILE

- The Scaled Agile Framework (SAFe) is freely available and may be able to help. It can help guide organisations in the scaling of agile practices.
- However other frameworks for scaling do exist (disciplined agile delivery, large-scale scrum, etc.)
- Scaling agile is challenging due to the nature (and often culture) of large organisations.
- Broader strategic planning and objectives need to be dealt with.
- Levels of responsibility in process and application of agile working methods need to be defined – and appropriate management responsibilities.
- Appropriate responsibilities, accountabilities and authorities need to be in place – or delegated as applicable.
- When multiple teams are working on a larger initiative, tasks and deliverables need to be synchronised.
- Organisational Change Management and senior executive support is necessary.
- Start small, and then scale up and out.

"WE TRIED STAND-UPS, BUT THEY ALWAYS TOOK FOREVER"

- Or you tried to do planning poker, or *<insert ritual here>* and it didn't go to plan. That's ok!
- Make the team accountable for the time spent on stand-ups and rituals, and reinforce what they should be about.
- Remember it takes time, practice, and patience.
- "But I don't have that, I have a project due!" – then pick different staff or a different methodology.
- If you don't have the time to train your people and you absolutely must manage in an agile-way, it may be time to pick new people – experienced ones. This often is not practical so spend the time it takes to train, mentor, and grow your team.

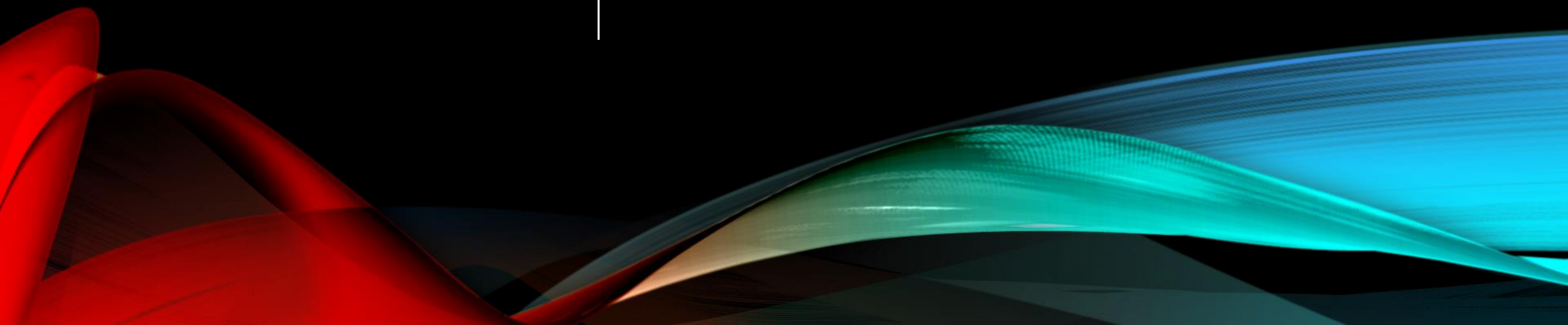
ESTIMATING PROJECT TASKS

- Planning poker.
- Estimate complexity, not time.
- The days of "percentage complete" are gone – in my opinion they should never have started; techo's have always lied about them (trust me).
- Measure your team's ability to deliver complexity over time – this will give you velocity.
- Use your velocity to forecast.
- Understanding that generally you still need to be able to give hard deadlines and timeframes. But use the schedule and talk to your people to design the timelines to begin with.

SUMMARY

- Innovative disruption has been happening for a long time, it isn't a recent thing.
- Many new technologies are not as complex as you may think. The core concepts are still the same.
- Build your entourage of people that you can ask for help and advice, if you haven't done so already.
- There's plenty of easy-to-digest material out there that can help explain new concepts.
- Work with your people to ensure you're successful, and uplift their skills (and yours) along the way.
- Don't worry if you aren't following methodology <x> to the letter-of-the-law. It takes people time to adjust and learn. (5 phases of team development)

DISCUSSION / QUESTIONS



THANK YOU