

Fundamentals of 'Going Digital'



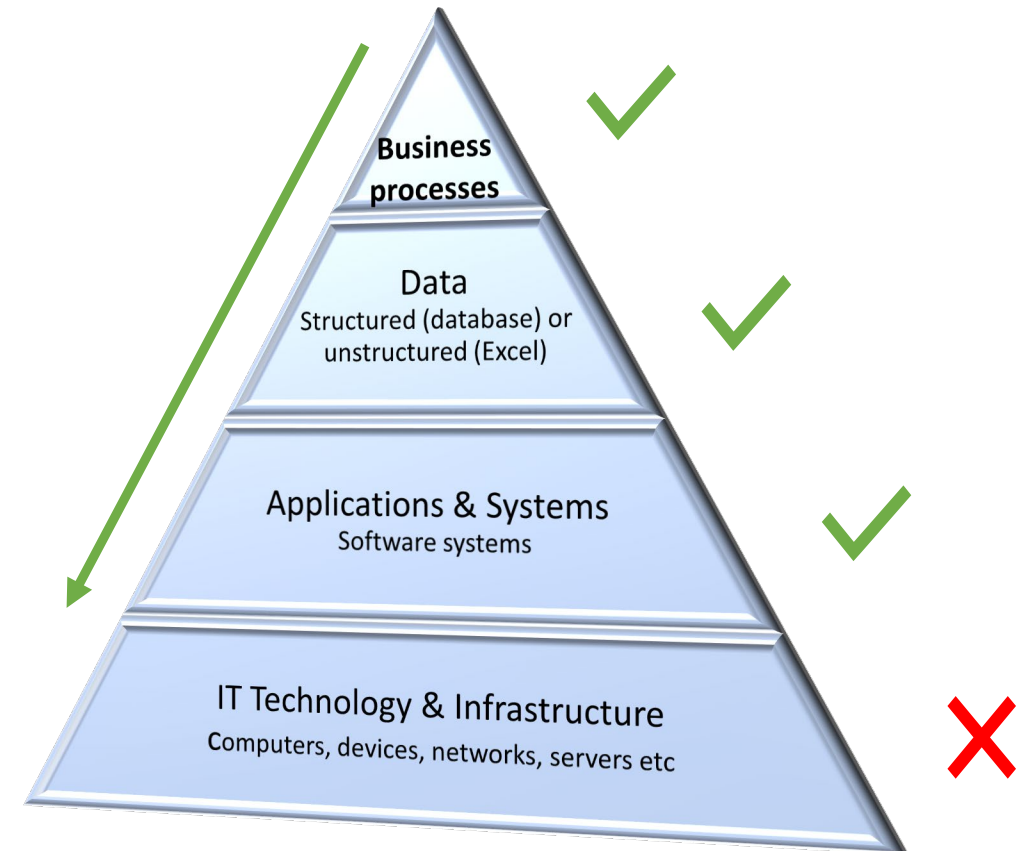
iuxta
alongside, nearby, beside

Purpose:

To understand the elements of a digital journey and how to work through a process to develop a digital roadmap (or strategy).

Contents:

1. How to assess where you are today, and establish your goals for the next 2–3 years
 - Steps of a digital journey
 - Ways to understand and document your current state
 - Financial considerations
2. How to build a roadmap (tools and techniques)
 - High level assessment table (first cut)
 - Risk / Value assessment (second cut)
 - Timelines and project stages
3. Guiding principles and milestones to ensure a successful journey
4. Examples of roadmaps for the horticulture sector



A digital journey is more than just using digital tools – its about progressively moving your business to a digital-first approach

A digital-first approach means:

- Having a **digital state of mind** – being comfortable to challenge the status quo – can your business processes, functions or interactions with customers, employees or suppliers be done better digitally?
- Having **streamlined digital processes** – for example:
 - **Enable staff** to undertake their roles in an easy and efficient way on a fully digital environment and upskilling them if necessary
 - Software systems and data that are **interconnected and provide real-time and reliable information**
 - Being able to **improve your decision making** by having data and information at your finger-tips

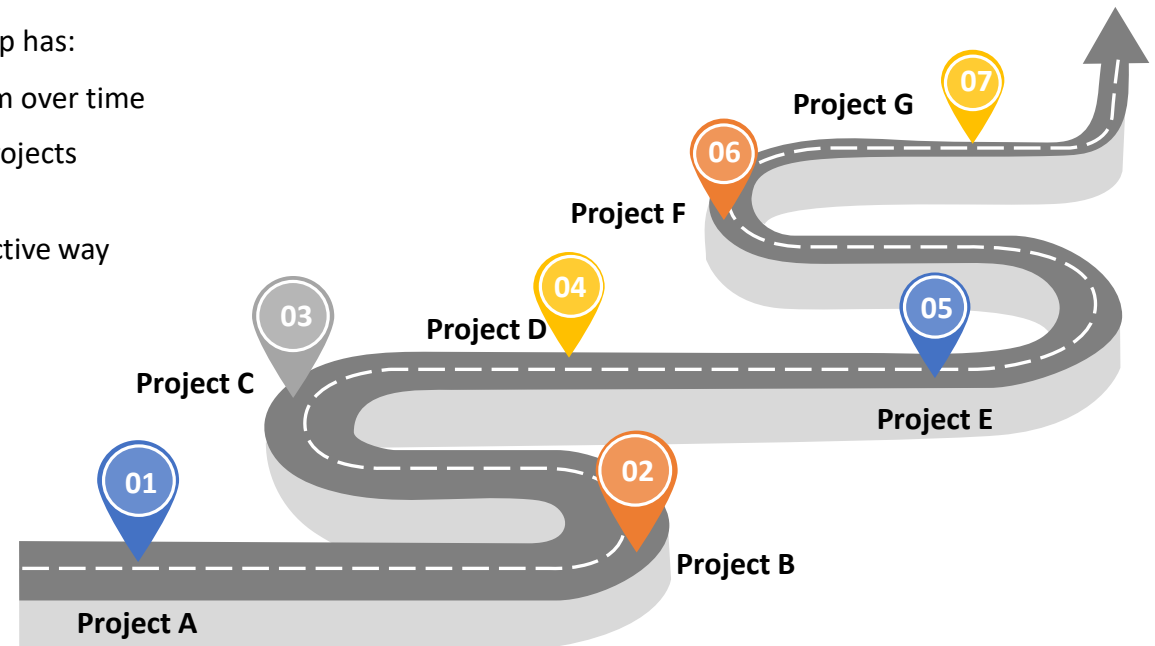


- **Investing in a scalable digital opportunities** rather than backfilling clunky unscalable processes with people and spreadsheets
- Having **leaders who are prepared to support digital** and are prepared to understand the technology opportunities
- Realising that this is an ever-evolving **journey and not a destination**

Five steps to digitally transform your business:

1. Digital goals

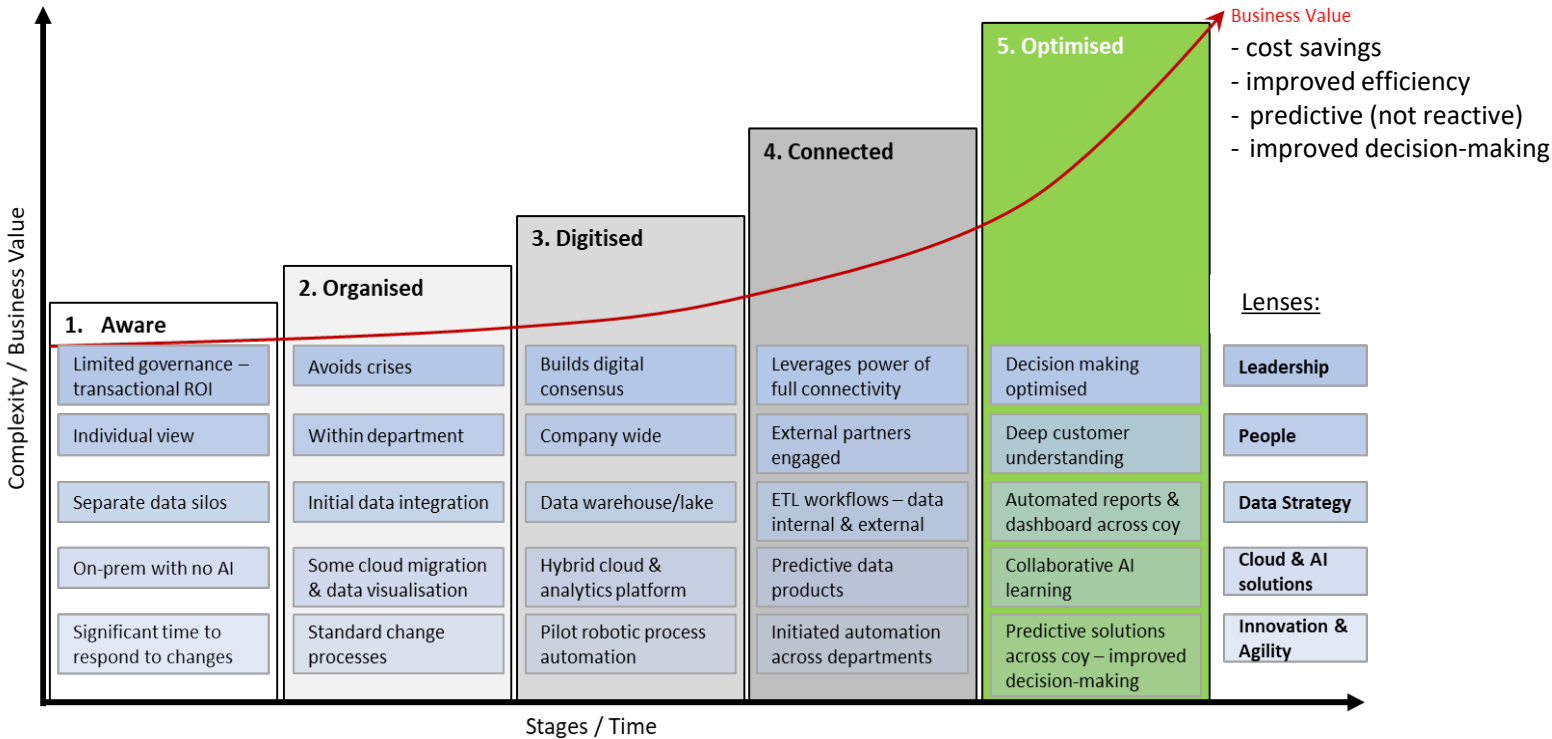
1. Establish your **digital goals** for the next 2–3 years
 - a. Understand the current state of your business from a digital perspective
 - b. Align your digital goals to your business objectives
2. Develop a **digital roadmap** – a prioritised list of programmes and projects. The Roadmap has:
 - a. manageable **bite-sized projects** that enable you to start small and build momentum over time
 - b. a mix of foundational projects that are coordinated with high-value high-priority projects
 - c. identified the resources, staff and talent required for success.The trick is to **knit the systems, people and processes together** in the most productive way
3. **Execute** using with good governance and project methodologies
4. **Regularly review** and update your roadmap and priorities – keep agile and adaptive as things evolve and change
5. **Communicate** – transforming means changing – changing requires regular communication and engagement



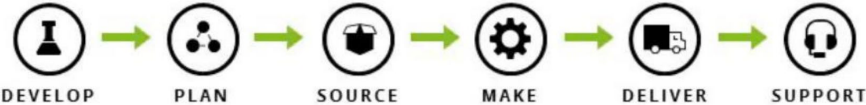
Firstly, understand where are you on the digital maturity model and where do you want be over the next 2–3 years?

1. Digital goals

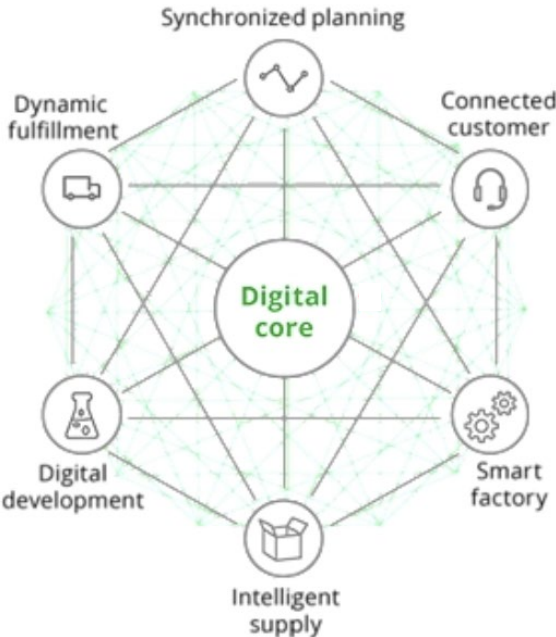
Digital Maturity Model¹



Traditional linear supply chains²



Digital transformation of your processes enables you to become agile and interconnected



Today: Where are you?

Goal: Where do you want to reach?

1 – Based on Dovel Technologies [Digital Maturity Model](#)
2 – The rise of the digital supply network - [DUP Digital-supply-network.pdf \(deloitte.com\)](#)

Identify any gaps in your processes and data by undertaking a high-level business process mapping

Example

2. Understand current state

Area	Process	Activity / Function	System used	Data In	Processing	Output	Current pain points / challenges	Priority	Comments
Spray	Spray plan	Develop spray plan	Paper	Manual	Manual	Manual	No templates	High	Do in Spray XX
	Spray plan	Create spray instructions	Spray XX	Manual	Semi-manual	Automated	Manual lookup of active ingredients and calculating rates	Medium	Integrate data
	Spray plan	Complete & submit spray diary	Spray XX	Manual	Automated	n/a	Can't automate date, tractor GPS and weather data on completion	Low	Do in Spray XX

- Keep it simple and high-level. Try not to get bogged down in the detail
- Cover all areas and ensure you identify all key processes and main pain points
- Engage with staff to get the information – quick workshops or one-on-one discussions, 2–4hrs per area should be sufficient
- Ask simple questions – How does that data get there? Why does that happen? What would you do to improve that?

High-level business process mapping

– key business processes and data flows

Objective: identify the key manual processes and data flows.
Digitise these processes and integrate the data across the processes



2. Understand current state

Example

Teams:

Orchard

Finance

Payroll

XX

XX

NZAPI

External / 3rd parties

Trucking

IVA

XX

Processes:

Spray

Key sub-processes:

- x
- x
- x

Harvest

Key sub-processes:

- x
- x
- x

Transport

Key sub-processes:

- x
- x
- x

Coolstore

Key sub-processes:

- x
- x
- x

Pack

Key sub-processes:

- x
- x
- x

Ship

Key sub-processes:

- x
- x
- x

Systems & Tools:

Time XX

Spray XX

Irrigate XX

Task XX

Email

Excel

Paper & Phone

XX

CropXX

ConsultX

XX

XX

External / 3rd parties

Key:

— Manual / semi-manual data flow

— Automated data flow

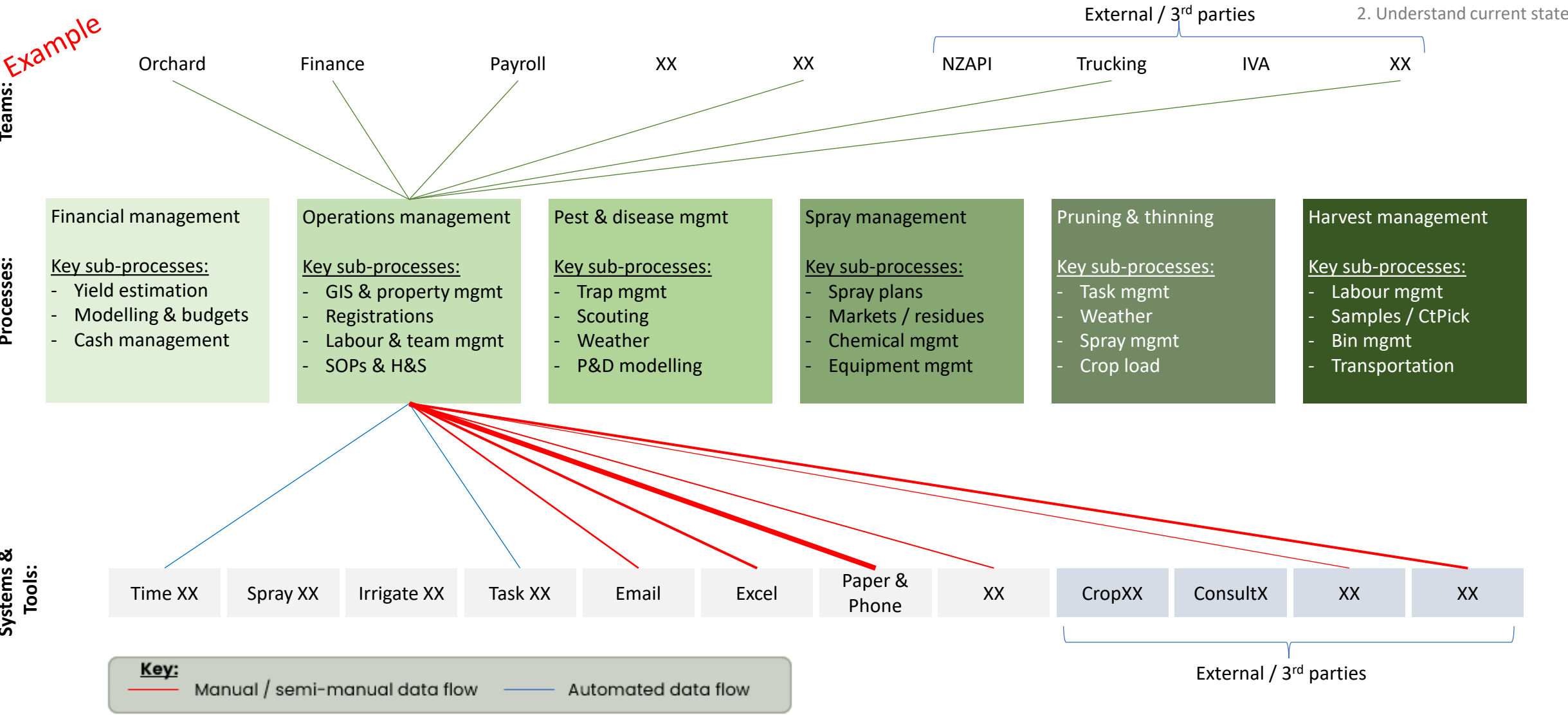
High-level business process mapping

– key business processes and data flows

Grower/Orchard specific example

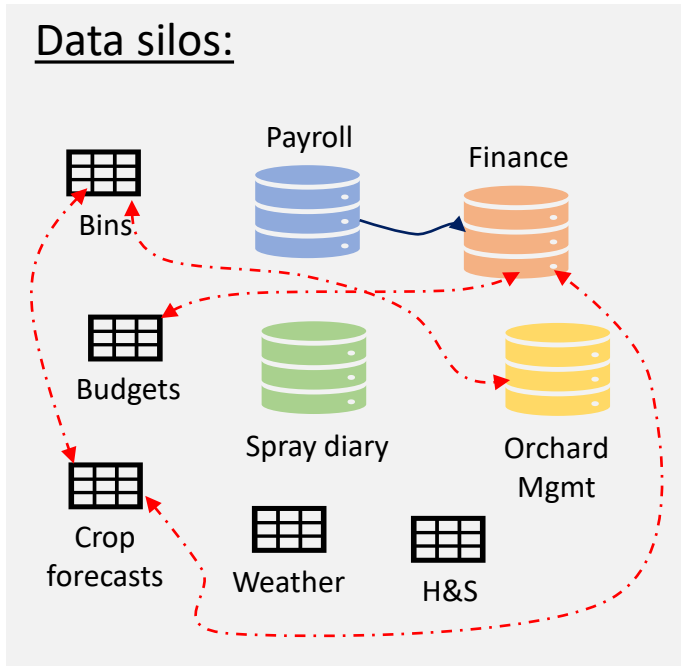


Example

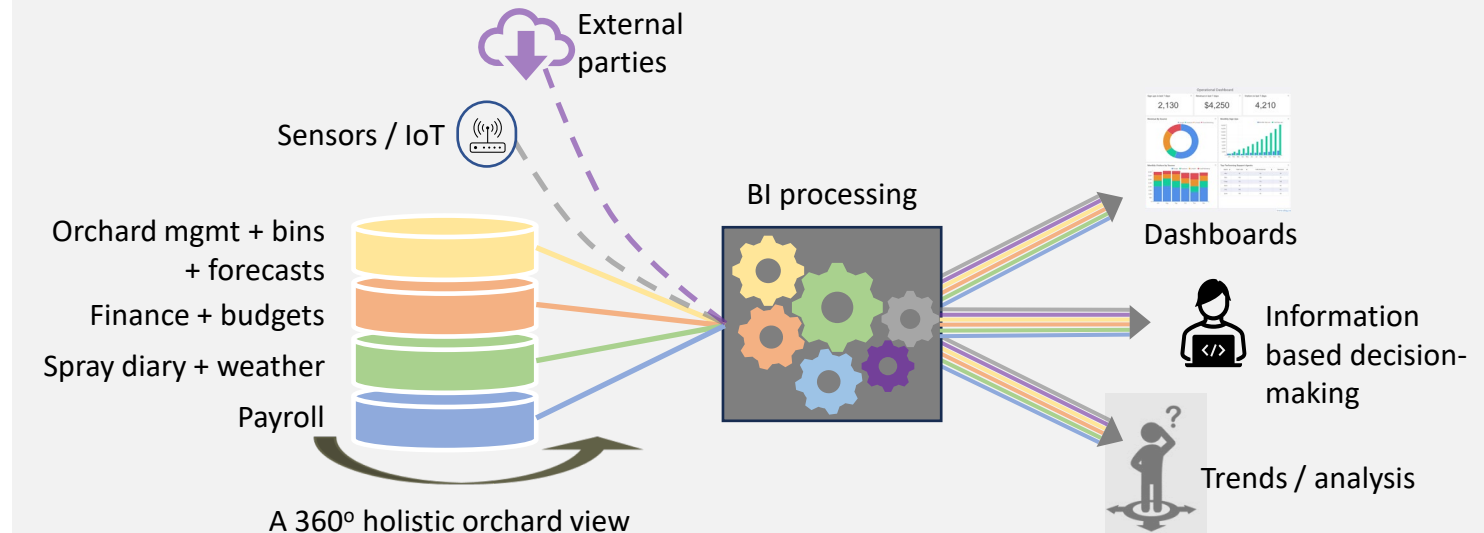


Developing an integrated data store is critical

Data silos:



Integrated data store: a cohesive ecosystem of data working together



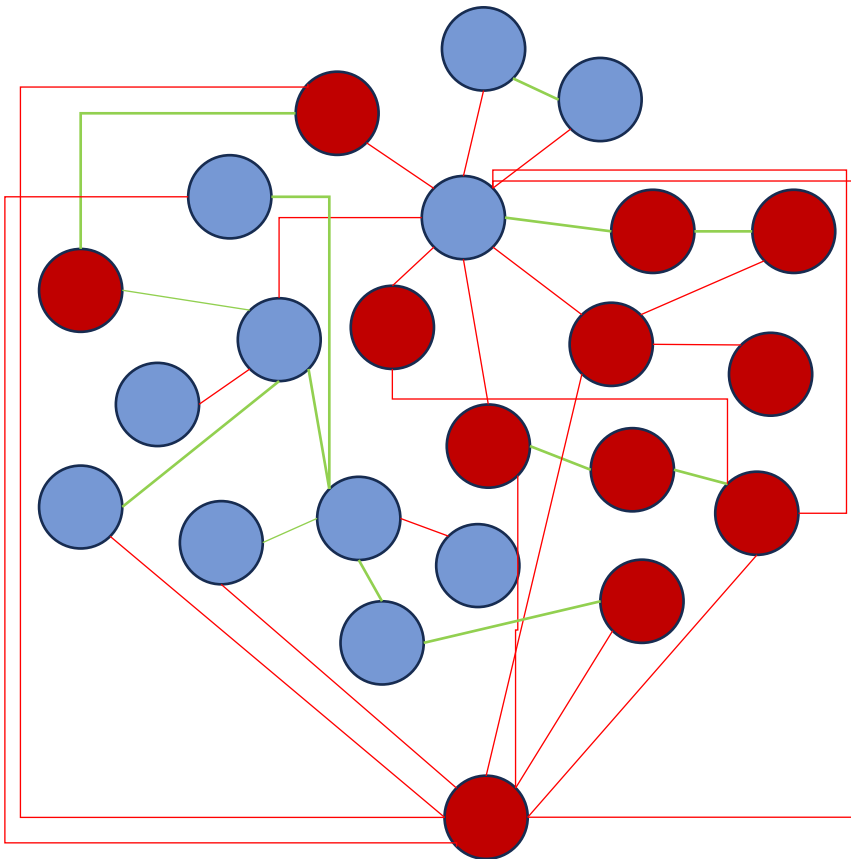
Process mapping will help you understand any data integration issues. You will have integration issues or data silos if you:

- Consistently **cut / paste** data from one system to another, or to a spreadsheet
- **emailing / file sharing** data to work colleagues
- **don't trust** the data's accuracy (no single source of truth / duplicated data)
- **pull data from a myriad of systems** to produce a common report

However, over the last few years there has been a **surge of data integration tools that makes it significantly easier** and cost-effective to integrate your data.

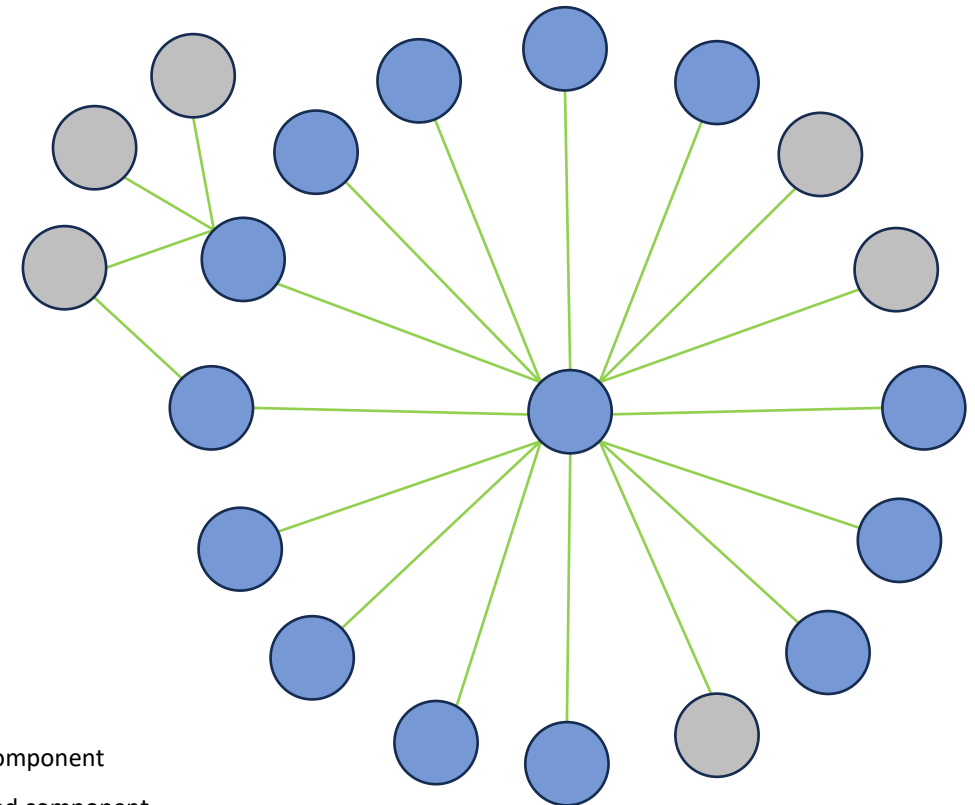
Example – a before and after photo:

Current (old) state – systems, processes and data

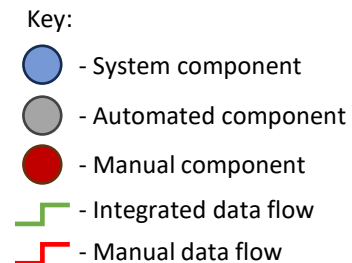


Relied on people, spreadsheets and knowledge to work

Future (new) state – nothing red



System & data driven, IP retained,
staff had clear consistent processes



Work out all feasible opportunities, rank and sequence the projects into an appropriate order

List all feasible opportunities / projects:

- The process mapping should sufficiently highlight and clarify your issues. There will be a range of simple to complex and small to large issues.

Where possible:

- **Be clear on the problem and the scope.** Note: the real problem may not be the one you originally identified
- Address problems that prevent the digitisation of your business processes
 - **removing manual and/or paper-based processes**
- Where there are no clear solutions, you may need to develop a range of alternative possible options. If necessary, research, test and refine solutions.
- Don't forget about the data implications... **everything should be connected through data**

Financial considerations:

A few general guidelines for the Horticulture sector:

- Benchmarking firms provide a range of industry averages
- **Size, complexity and maturity** of your organisation **will impact these ranges**

Metric – IT Spend:	Range (p.a.)	Notes
As a % of company revenue	1% – 3%	Horticulture is at the low end. All sectors weighted average = 8% approx
Per IT user	\$7,000 – \$12,000	Varies on total IT users (economies of scale) & digital maturity
Opex vs Capex	Opex: 60% – 80% Capex: 40% – 20%	Maintenance vs new Capex can be lumpy
Cyber security as a % of total IT budget	5% – 15%	Likely to increase as you progress your digital journey

Group your issues / areas of work, assess against fit, financial costs / benefits, and estimate an initial payback

3. Building a roadmap

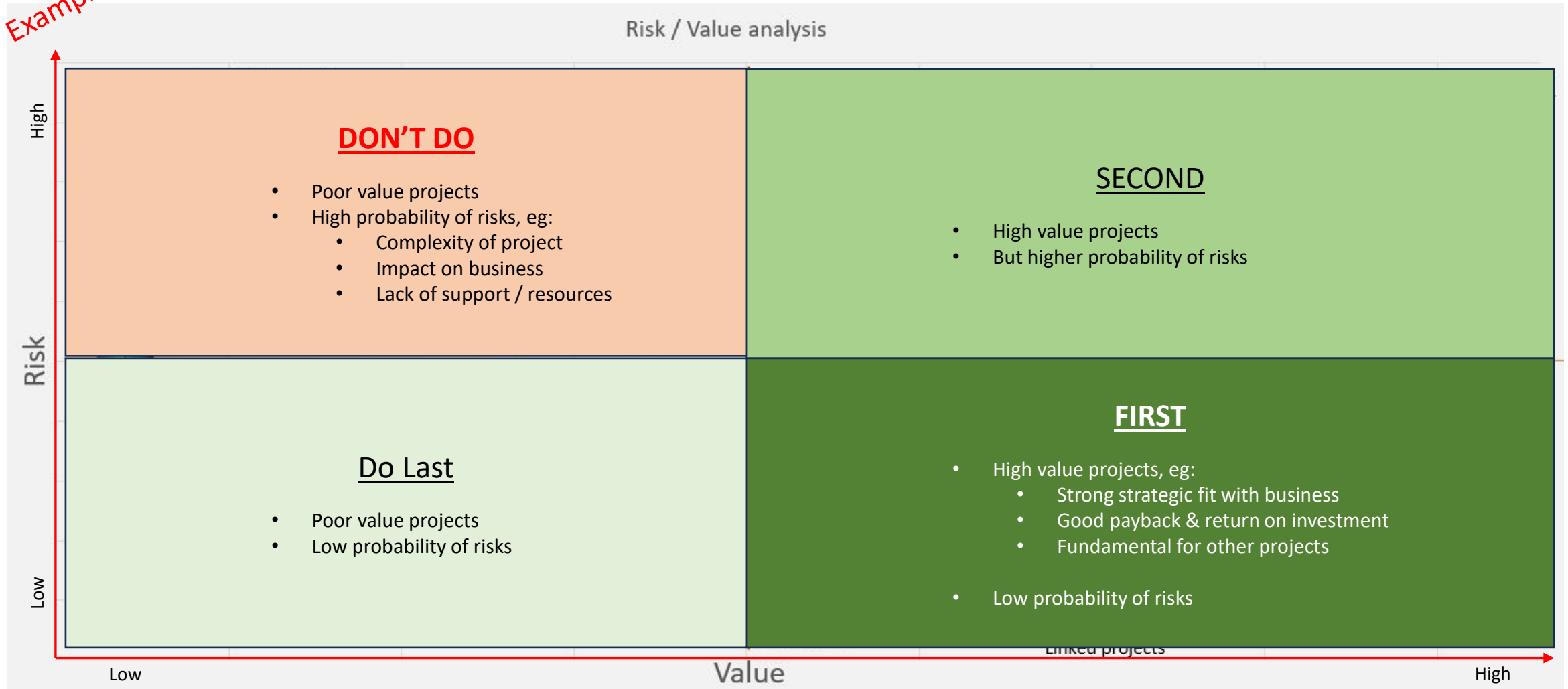
Programmes / projects	Business strategic area	Technology strategic area	Strategic fit	Technology fit	Financial benefits	Project costs	Payback estimate	Comments
1. <i>Example</i>		Customer & staff engagement	High	High	\$	\$	3 yrs	Eg: digital connections
2.		Process / systems improvements	Med	Med	\$\$\$	\$	>1 yrs	Eg: digitisation via software systems
3.		Data & dashboards	Low	Low	\$	\$\$\$\$	15 yrs	Eg: data integration, cloud storage
4.		Operational technology	High	Med	\$\$	\$\$\$	3.5 yrs	Eg: automation, IoT & sensors
5.		Security & infrastructure	n/a	High	\$\$	\$\$	2 yrs	Eg: cyber & data security & privacy

- Technological fit: does it meet standards such as:
 - **Intellectual property & data**: company retained
 - **Security risks**: no security risks
 - **Standardisation**: buy best-of-breed, off-the-shelf, configure don't customise (where possible)
- Financial benefits:
e.g. Productivity gains – average salary \$60k + entitlements (11%). Assume only 1 year's savings:
 - \$ = 10k to 30k = up to 0.4 FTE saving
 - \$\$ = 30k to 60k = up to 0.9 FTE saving
 - \$\$\$ = 60k to 100k = up to 1.5 FTE saving
- Project costs: an estimation of costs to implement and operate, no back-fill costs for project staff
- Simple payback calculation – use worst-case – high project cost and low benefit

	Costs:			
Benefits:	\$ Low (\$30k)	\$\$ Med (\$60k)	\$\$\$ High (\$100k)	\$\$\$\$ V High (\$150k)
\$\$\$ High (\$60k)	> 1 yr	1 yr	1.5 yrs	2.5 yrs
\$\$ Med (\$30k)	1 yr	2 yrs	3.5 yrs	5 yrs
\$ Low (\$10k)	3 yrs	7.5 yrs	10 yrs	15 yrs

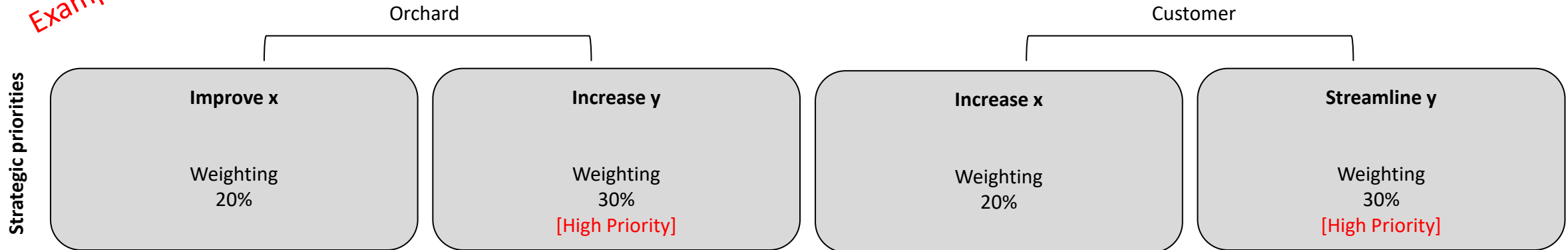
Assess against perceived 'value' and 'risks' of each project and plot

Example



Next, align the roadmap opportunities with your strategic priorities

Example



Technology, systems and data opportunities to **enable and support** strategic priorities:

Options to enable x:

- ☐ Digitisation / automation of processes
- ☐ Automation of data collection
- ☐ Crop monitoring & analytics
- ☐ Smart orchard sensors
- ☒ Orchard management system
- ☒ Inventory & logistics system
- ☒ Production management system
- ☒ Demand & supply optimisation

Options to enable x:

- ☐ Supply chain & customer integration
- ☐ Data and Business Intelligence tools
- ☐ Dashboards, analytics & trend analysis
- ☐ Forecasting & predictive analytics
- ☒ Geographic Information System
- ☒ Spray management system
- ☒ Customer engagement / personalisation

Options to enable x:

- ☒ Robotics & autonomous vehicles
- ☒ Robotic process automation
- ☒ Precision farming tech

Options to enable x:

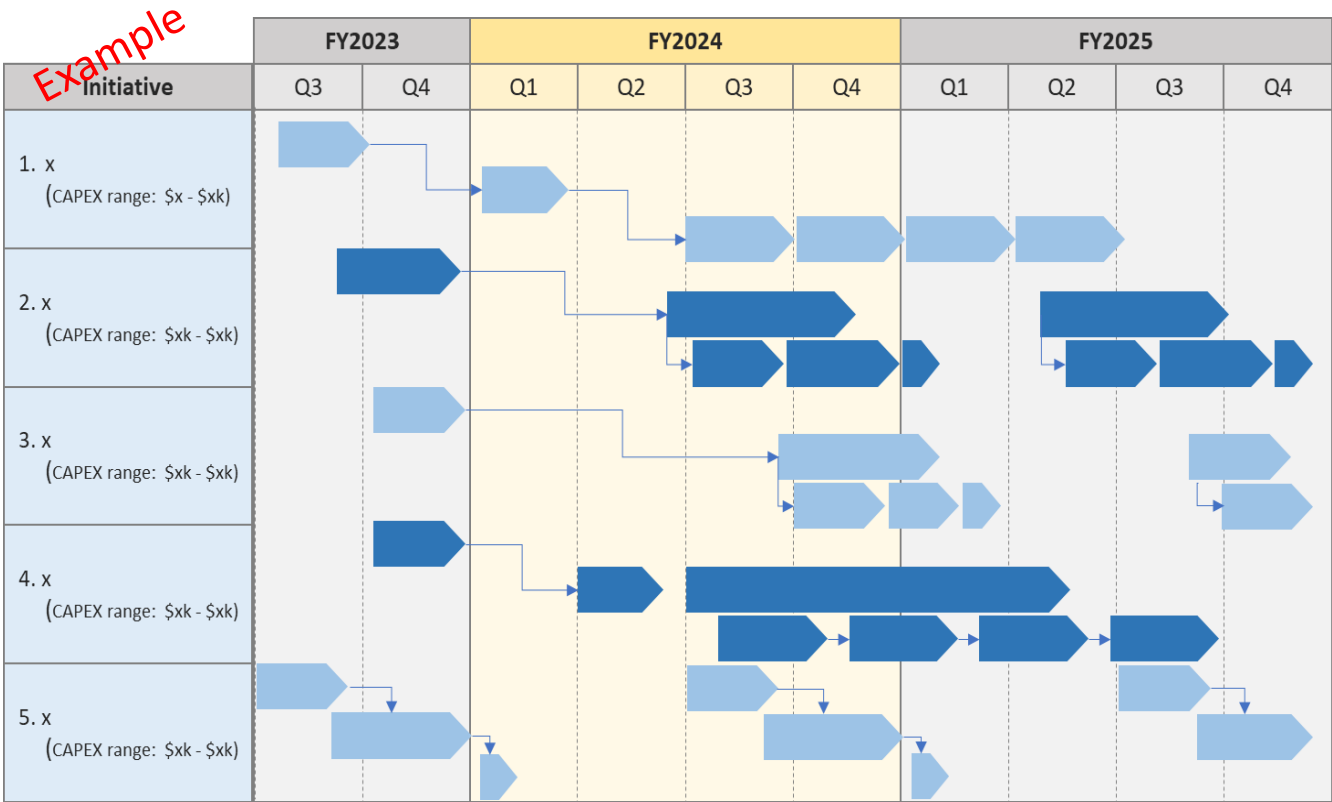
- ☐ Mobility, remote working and access
- ☐ Device management platforms
- ☐ Cyber security measures

Example categories:

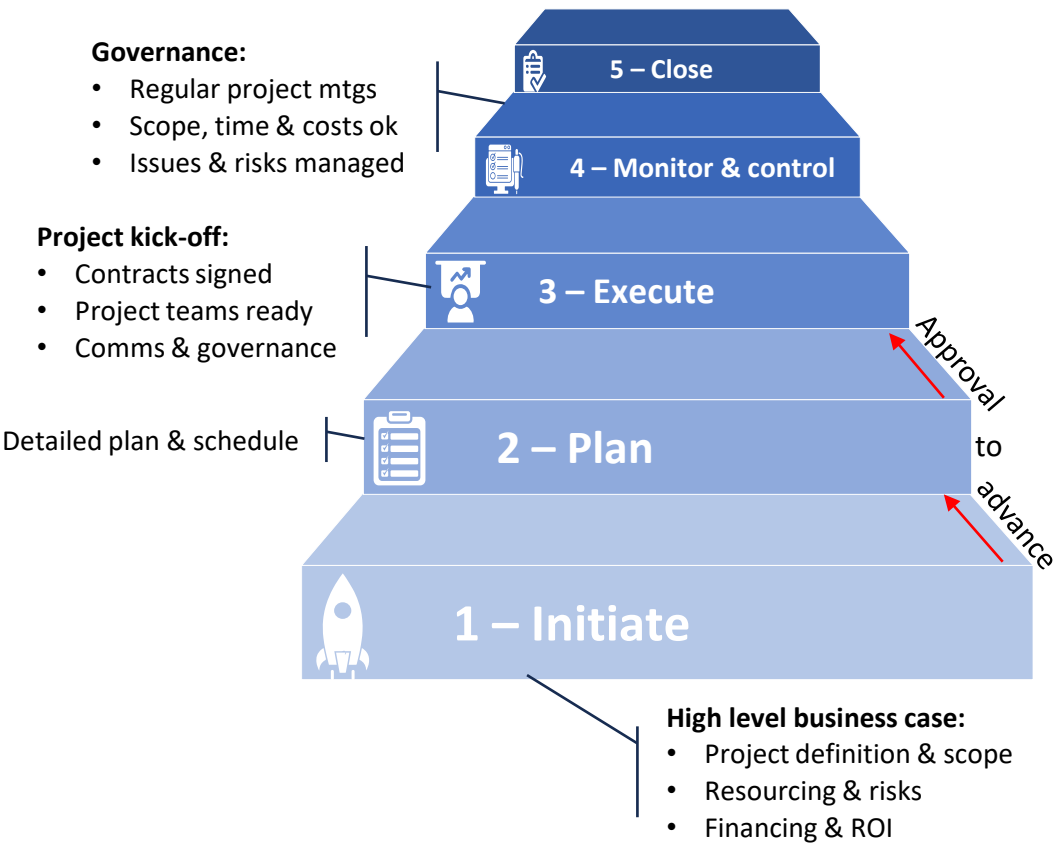
- ☒ = Data & Information
- ☒ = Core systems
- ☒ = Robotics
- ☐ = Access & Security

Execution of projects – timelines and project management

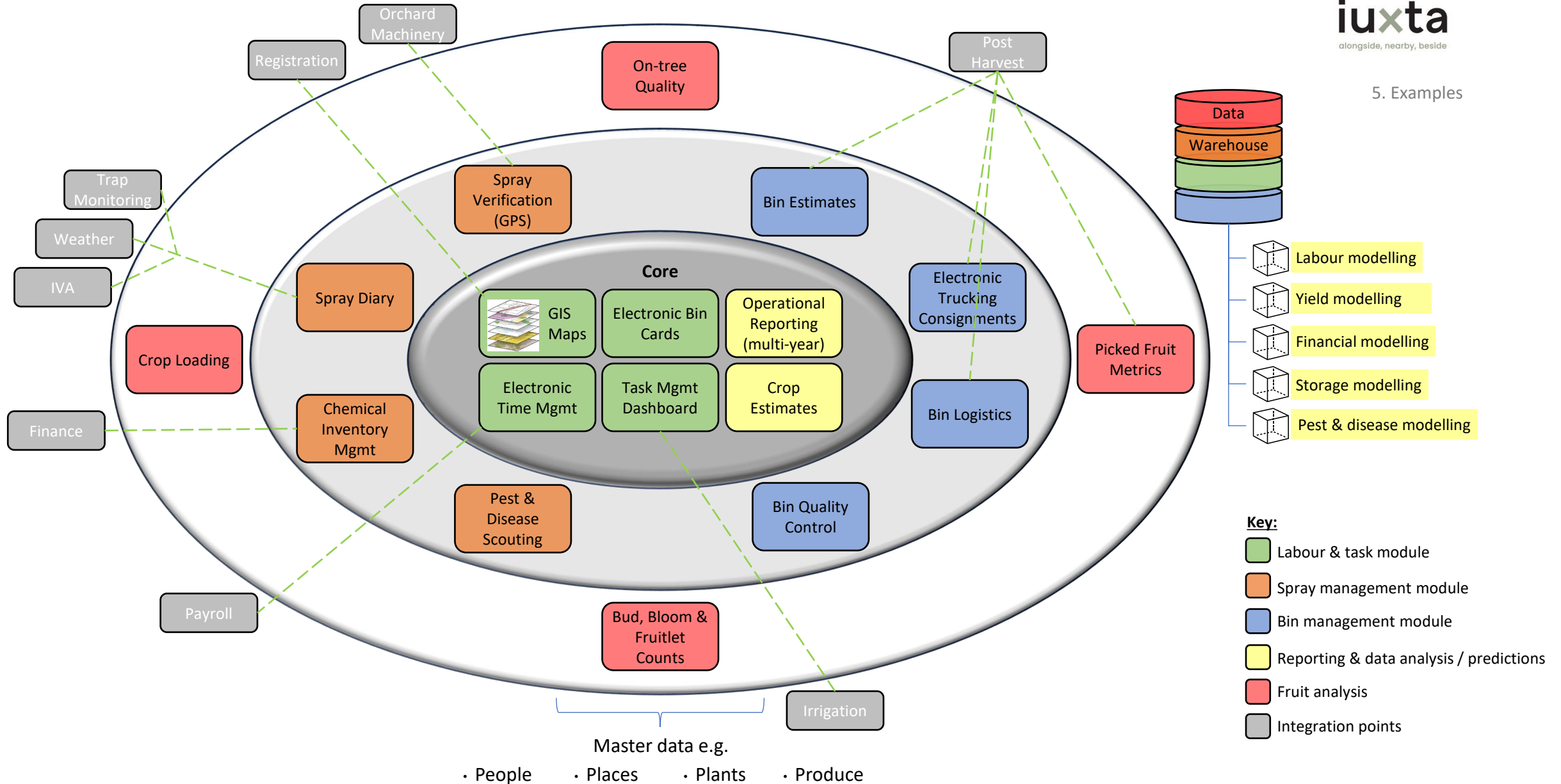
Timelines: develop a simple 1-page overview of all projects and phases



Key project phases & gates:
best practice = increased success

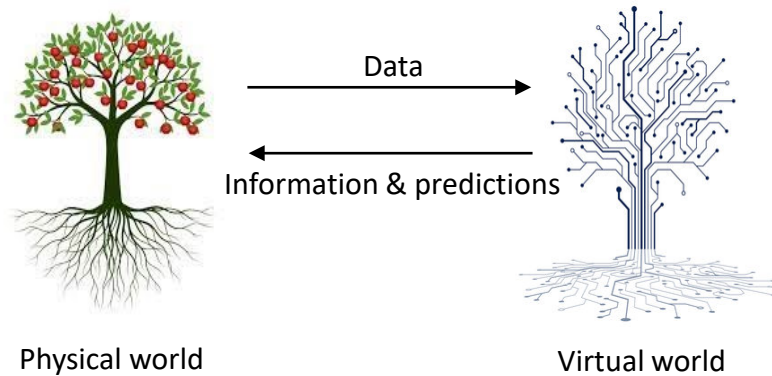


Example of an Orchard Management System

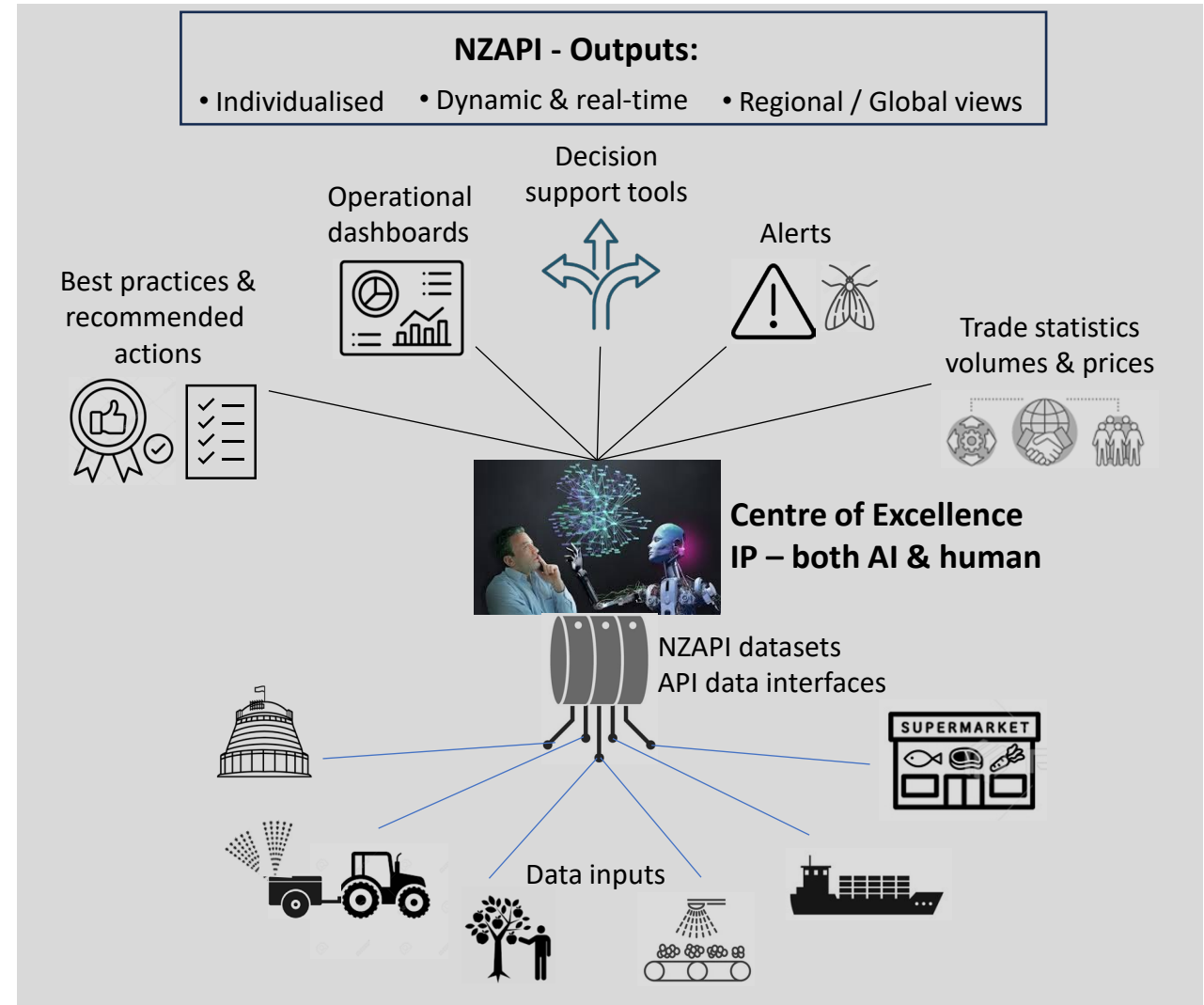


NZAPI's technology vision: **to become a Centre of Excellence**, with recommendations and insights that only an industry-wide organisation can create and disseminate for the benefit of all industry participants

Example



- Data can be amalgamated to create a 'digital twin' – a virtual representation that serves as the **real-time digital counterpart of the physical environment**
- Benefits of a digital twin is that it can **predict or highlight issues, risks or actions required** to be undertaken well in advance of them occurring
- With the amount of data NZAPI holds together with the Smart & Sustainable R&D projects delivering an even greater amount of data, **NZAPI can become a Centre of Excellence with insights and recommendations** that only an industry-wide organisation can create and disseminate for the benefit of all industry participants



How to start

- Take aways:
 1. Set a **vision** & develop a **roadmap**
 2. **Understand your gaps** in processes, systems and data
 3. Focus on **removing manual or paper-based processes** for core functions
 4. Focus on **amalgamating data silos** and integrating data
 5. Sequence projects – both short-term simple fixes and long-term structural issues
 6. Develop your Business Intelligence capabilities & talent
- Don't let the URGENT cloud your view of the IMPORTANT
- “Strategy is a commodity; execution is an art” – Peter Drucker

