

# Managing digital technology risks

Digital transformation training programme  
Module #6



ASIA AND THE PACIFIC

**Regional  
Innovation Centre**

A few  zoom  
we start...

house rules before

- Make sure your name is displayed
- Keep your video on unless you have connectivity issues
- Mute if you're not speaking
- Don't hesitate to ask questions by raising your hand or using the chat

# Where we are

1. Introduction to digital government

2. Human-centred design for digital services

3. Agile and open ways of working

4. Building trust in digital government

5. Data: uses, opportunities and risks

**6. Managing digital technology risks**

7. Navigating barriers to digital government

## Learning objectives

- ✓ Identify the main risks in digital projects
- ✓ Understand the pros and cons of technology and delivery choices
- ✓ Describe risk management approaches to digital transformation

**1. The new technology landscape**

**2. Case study**

**3. Making choices**

**4. Risk management**

# **1. The new technology landscape**

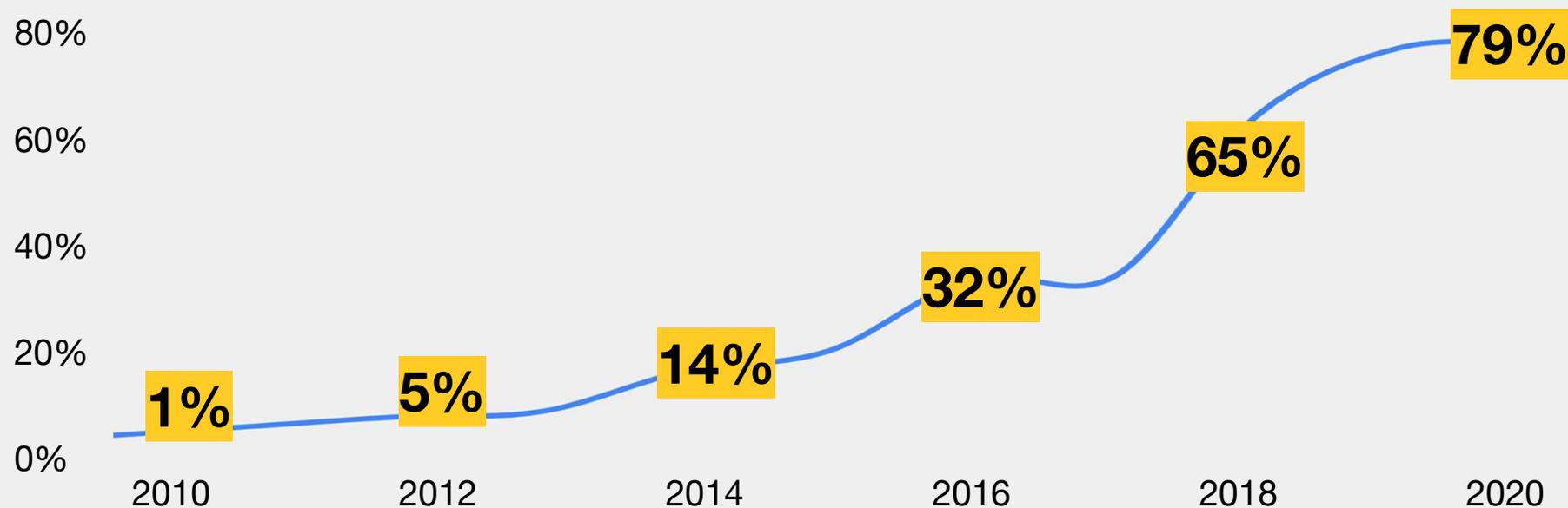
2. Case study

3. Making choices

4. Risk management

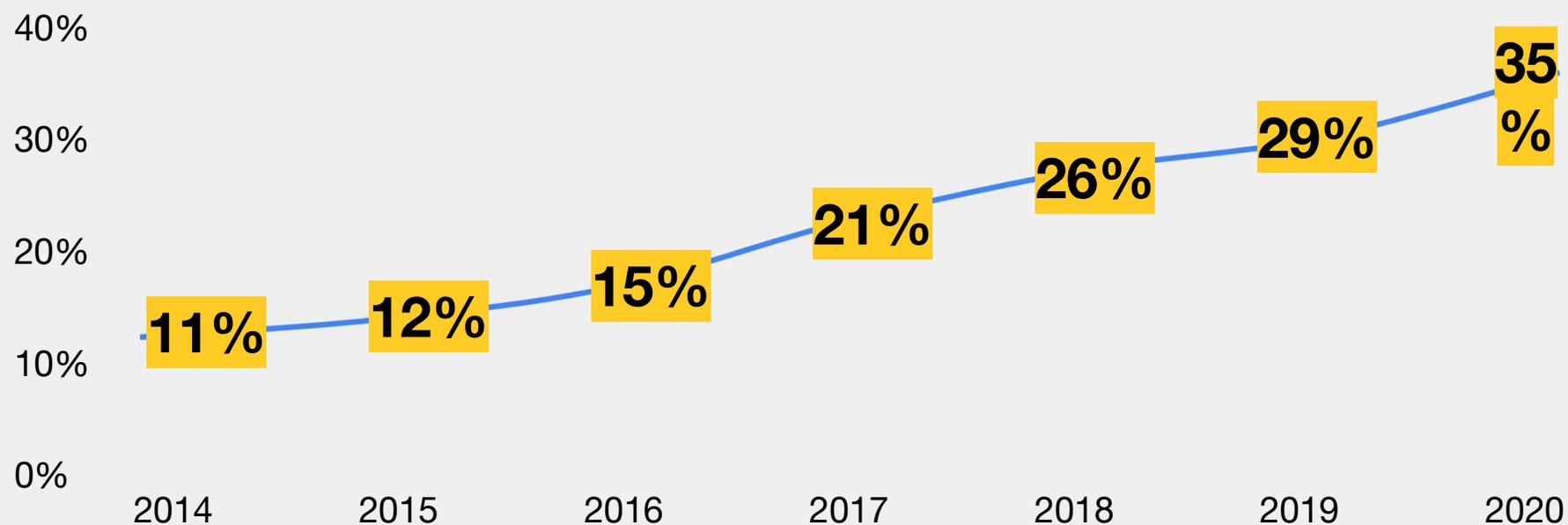
**Internet**, **mobile**, and **cloud**  
technologies have changed  
our lives.

# Individuals using the internet in Cambodia as a percentage of the population



Source: World Bank data

# Individuals using the internet in Sri Lanka as a percentage of the population

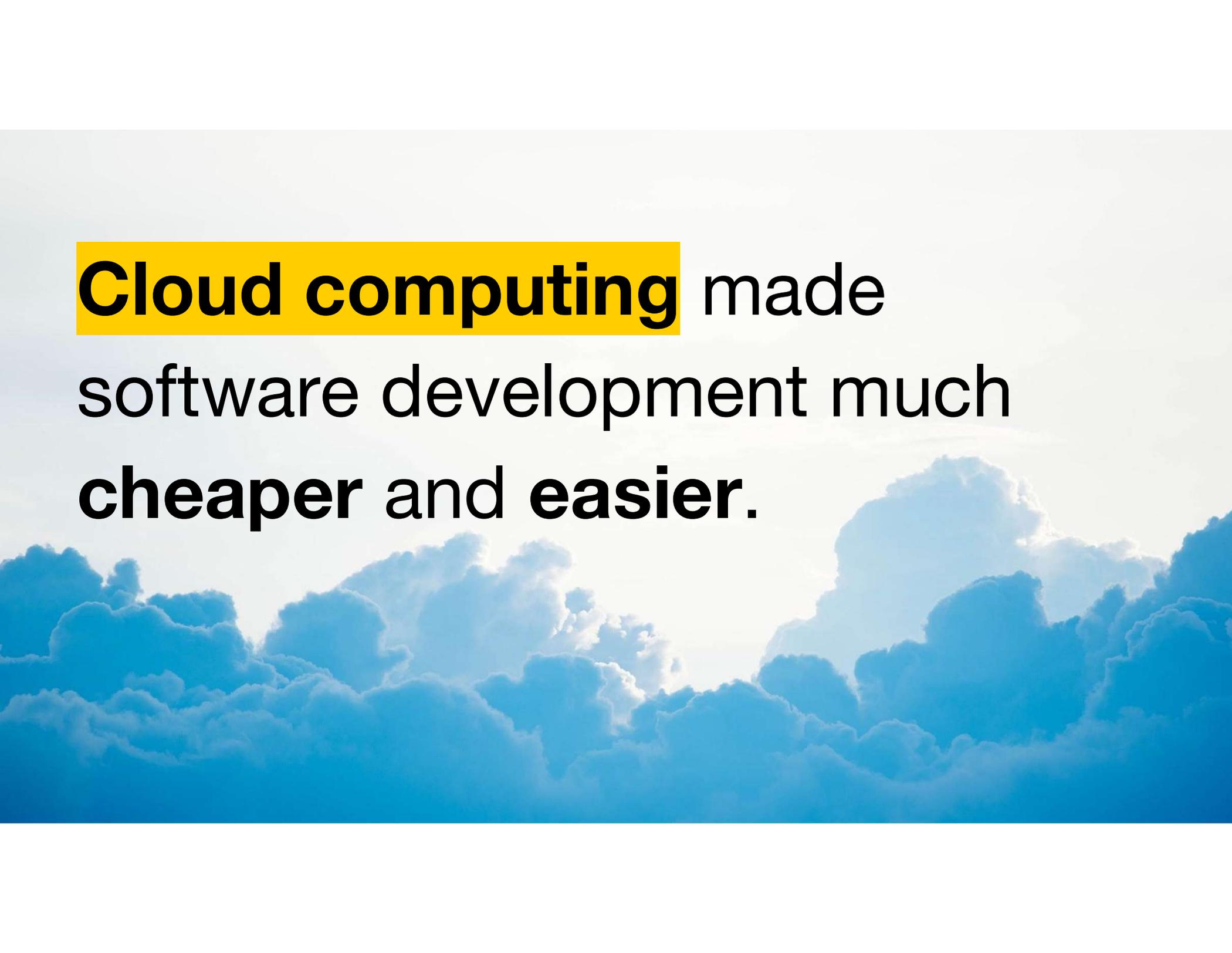


Source: ITU data

**At the end of 2020,  
1.2 bn people in Asia  
Pacific were connected  
to the mobile internet,  
equivalent to a 42%  
penetration rate.**

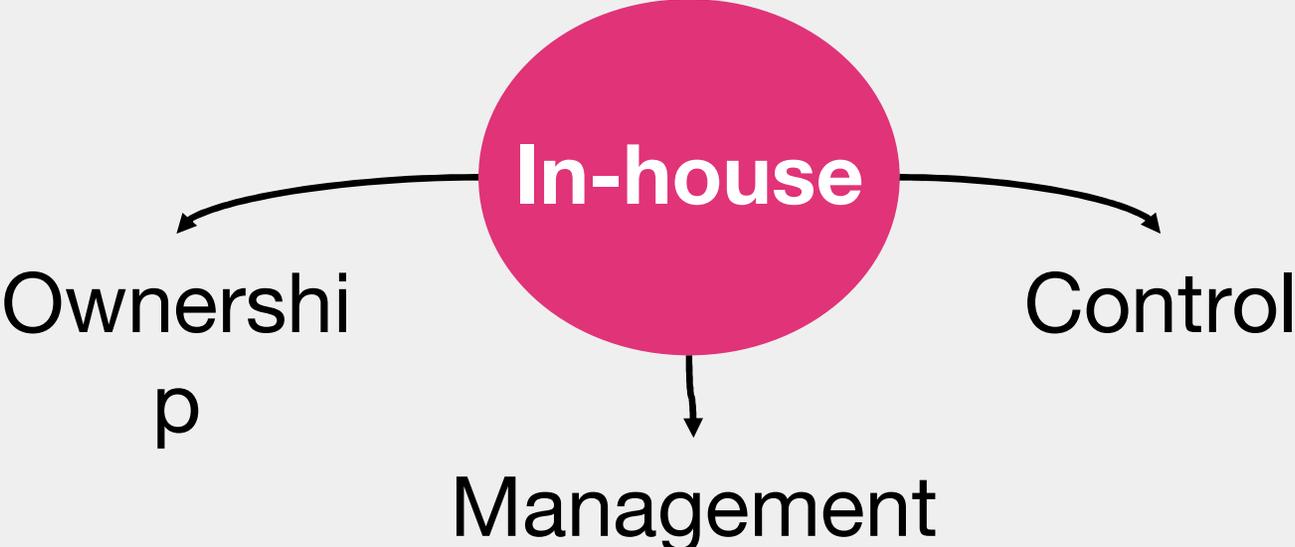
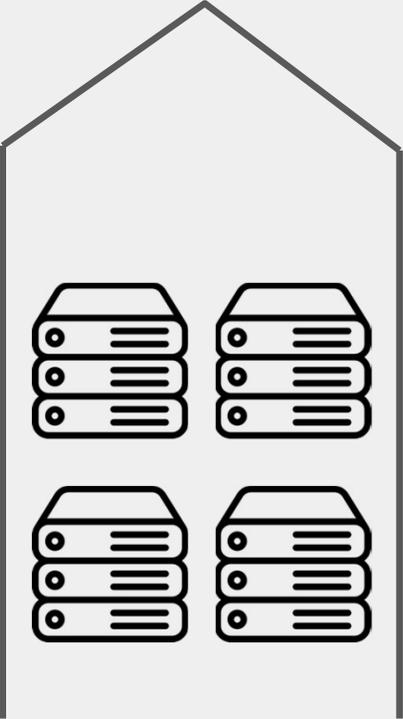


Source: GSMA

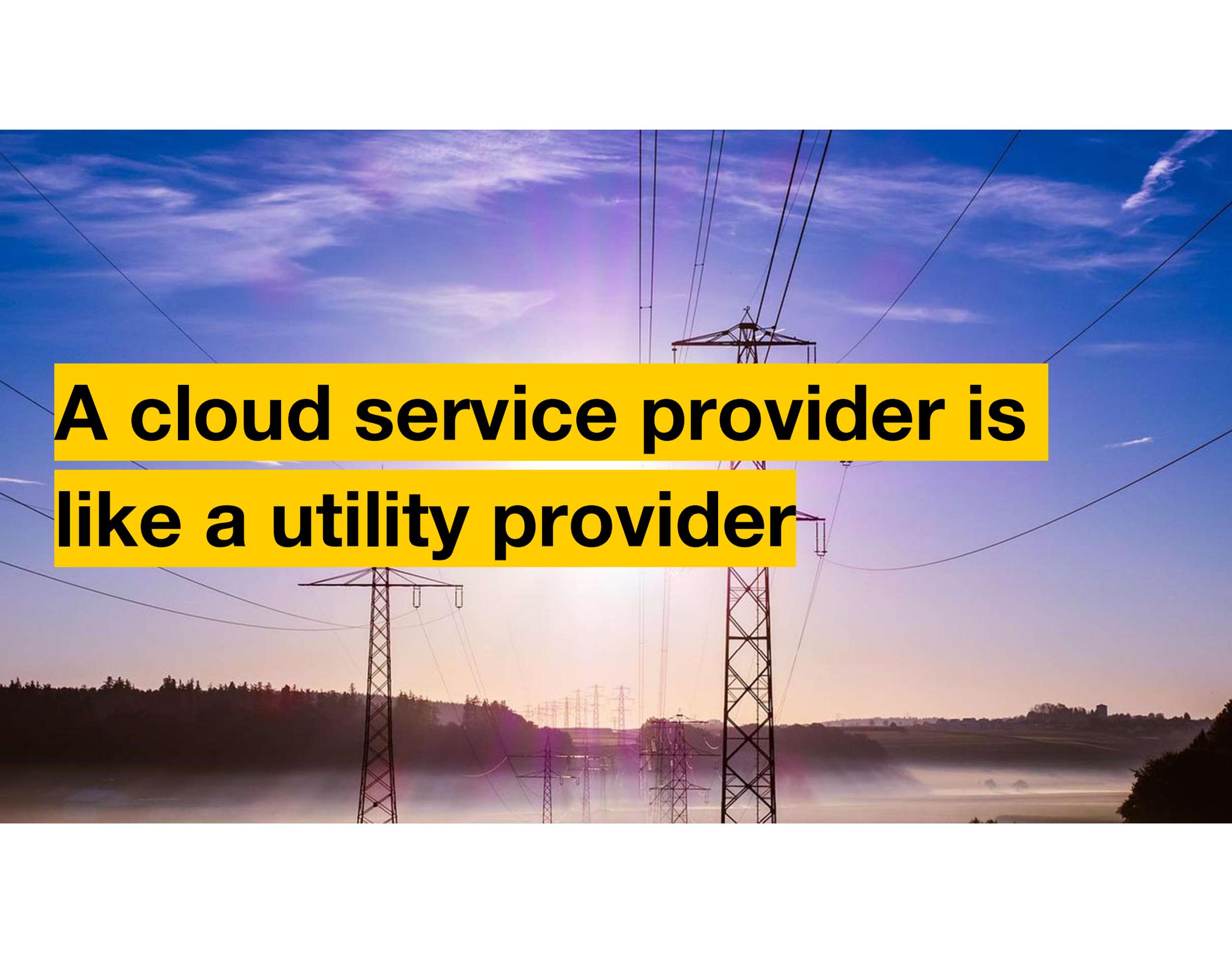


**Cloud computing** made  
software development much  
**cheaper and easier.**

# On-premise

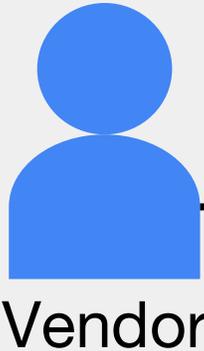
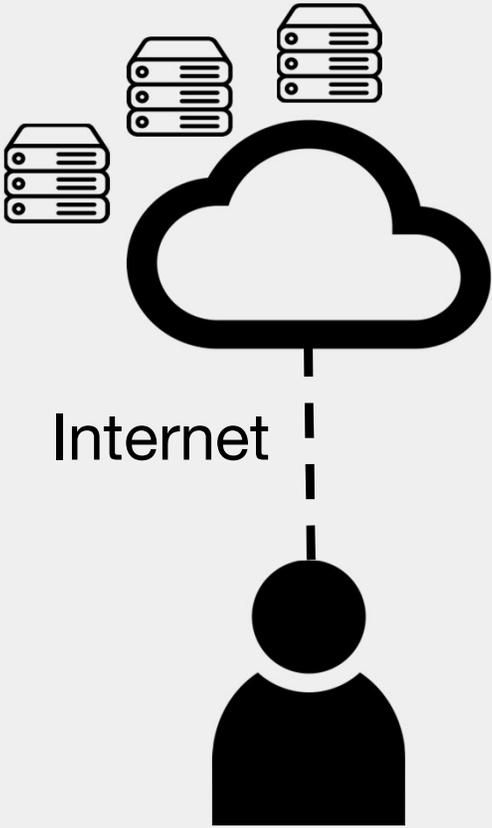


**High initial capital investment**

A landscape photograph featuring several high-voltage power line towers and their associated cables stretching across the scene. The sky is a deep blue with wispy white clouds. The ground is a mix of green fields and dark trees, with a layer of mist or fog near the horizon. The overall lighting suggests a clear, bright day.

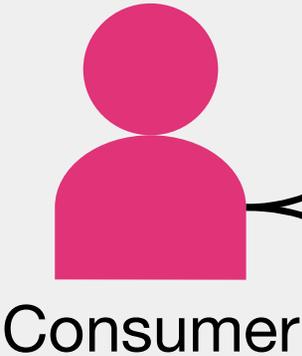
**A cloud service provider is  
like a utility provider**

# Cloud services



Owns and manages infrastructure

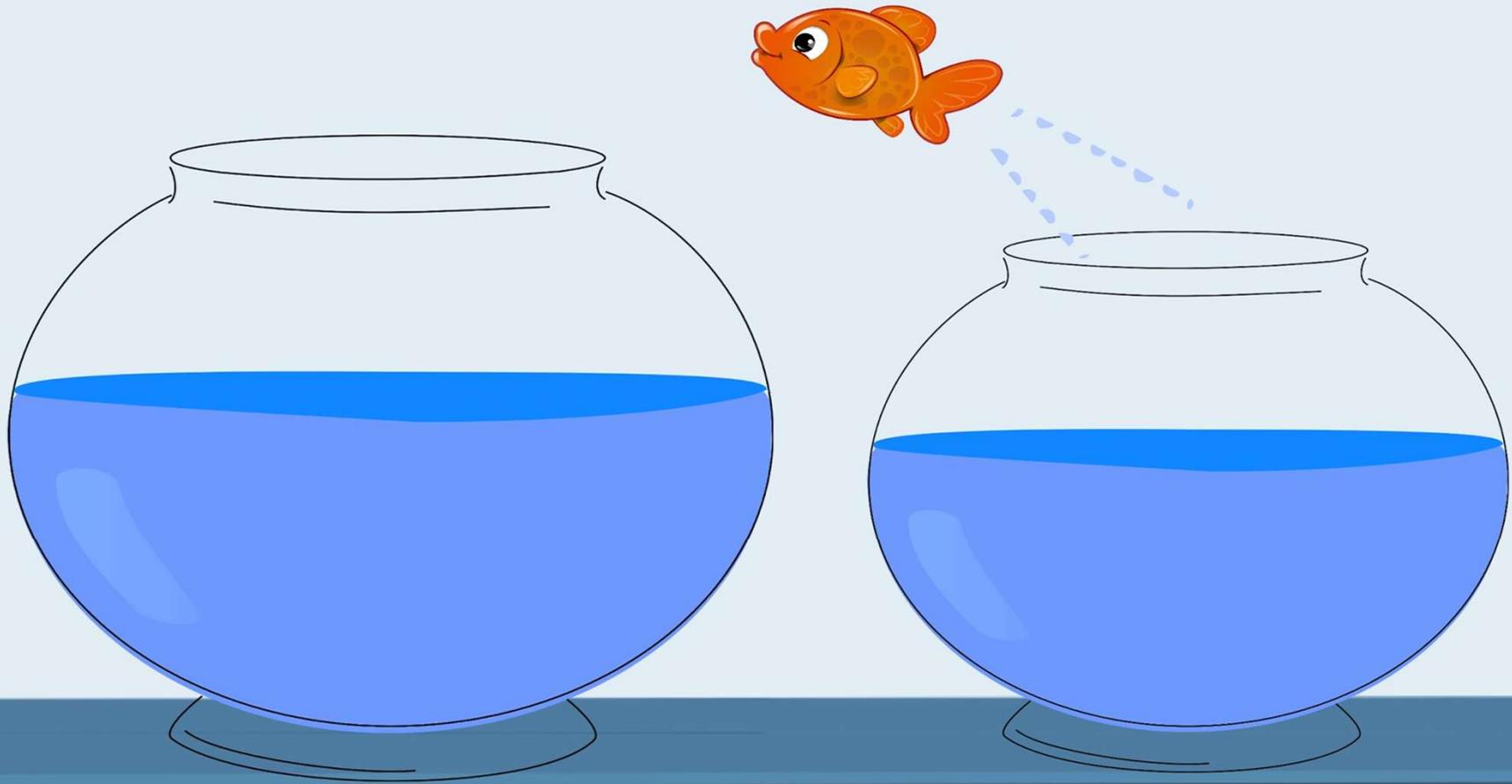
More control over infrastructure



Less upfront investment

Less control

**But making the jump can be scary...**



Technology is an **enabler**,  
not the end game.

1. The new technology landscape

**2. Case study**

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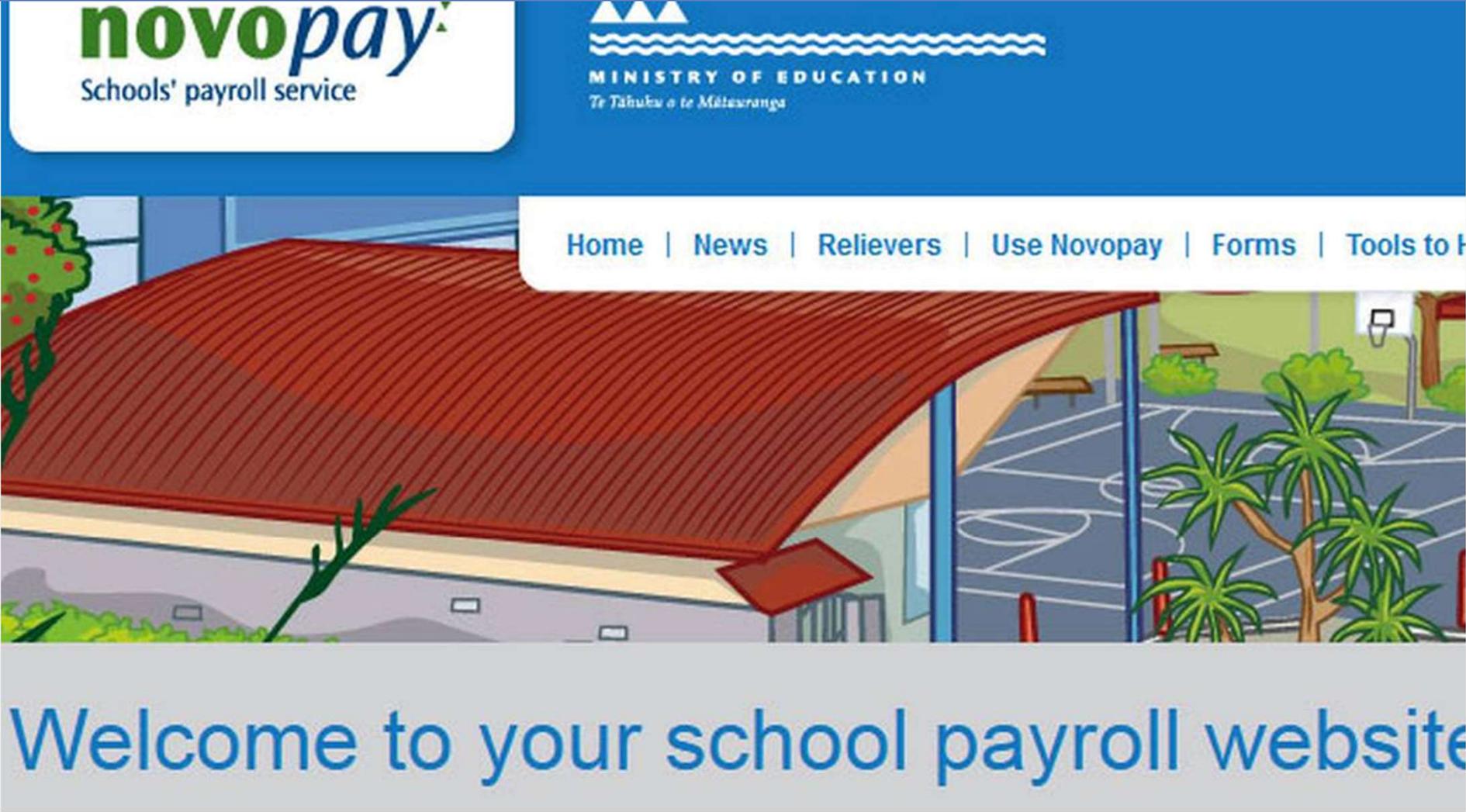
10-min group discussion

In your experience, why might people fear or resist technology projects in the public sector?

## Main types of risks

- Operational
- Value creation
- Cyber and data privacy
- Reputational

Example



The image shows the top section of a website. On the left, there is a white rounded rectangle containing the 'novopay' logo in green and blue, with the text 'Schools' payroll service' below it. To the right, on a blue background, is the Ministry of Education logo featuring three white triangles above wavy lines, with the text 'MINISTRY OF EDUCATION' and 'Te Tāhuhu o te Mātauranga' below. A white navigation bar contains the links 'Home | News | Relievers | Use Novopay | Forms | Tools to'. Below the navigation bar is a colorful illustration of a school building with a red corrugated roof and a courtyard with palm trees. At the bottom, a grey banner contains the text 'Welcome to your school payroll website' in blue.

**novopay**  
Schools' payroll service

**MINISTRY OF EDUCATION**  
Te Tāhuhu o te Mātauranga

[Home](#) | [News](#) | [Relievers](#) | [Use Novopay](#) | [Forms](#) | [Tools to](#)

Welcome to your school payroll website

“a modern, technology-based solution which would provide greater functionality, a better user interface and more useful information”

## Novopay timeline

**2008**

The Ministry of Education signs a contract with Talent2 to develop and manage the delivery of Novopay.

**2010**

Novopay was meant to go live but fails to do so. The Ministry decides to continue to work with Talent2.

**2012**

Novopay goes live despite the warning of trial-users.

When Novopay went live and performed its first pay run, 5,000 school staff were underpaid.

# Novopay: Education Ministry's deputy secretary resigns

11 Jun, 2013 08:51 AM



Novopay Minister Steven Joyce, right, with acting Secretary of Education Peter Hughes, at the release of the Ministerial inquiry into Novopay. Photo / Mark Mitchell

## Novopay costs continue to mount

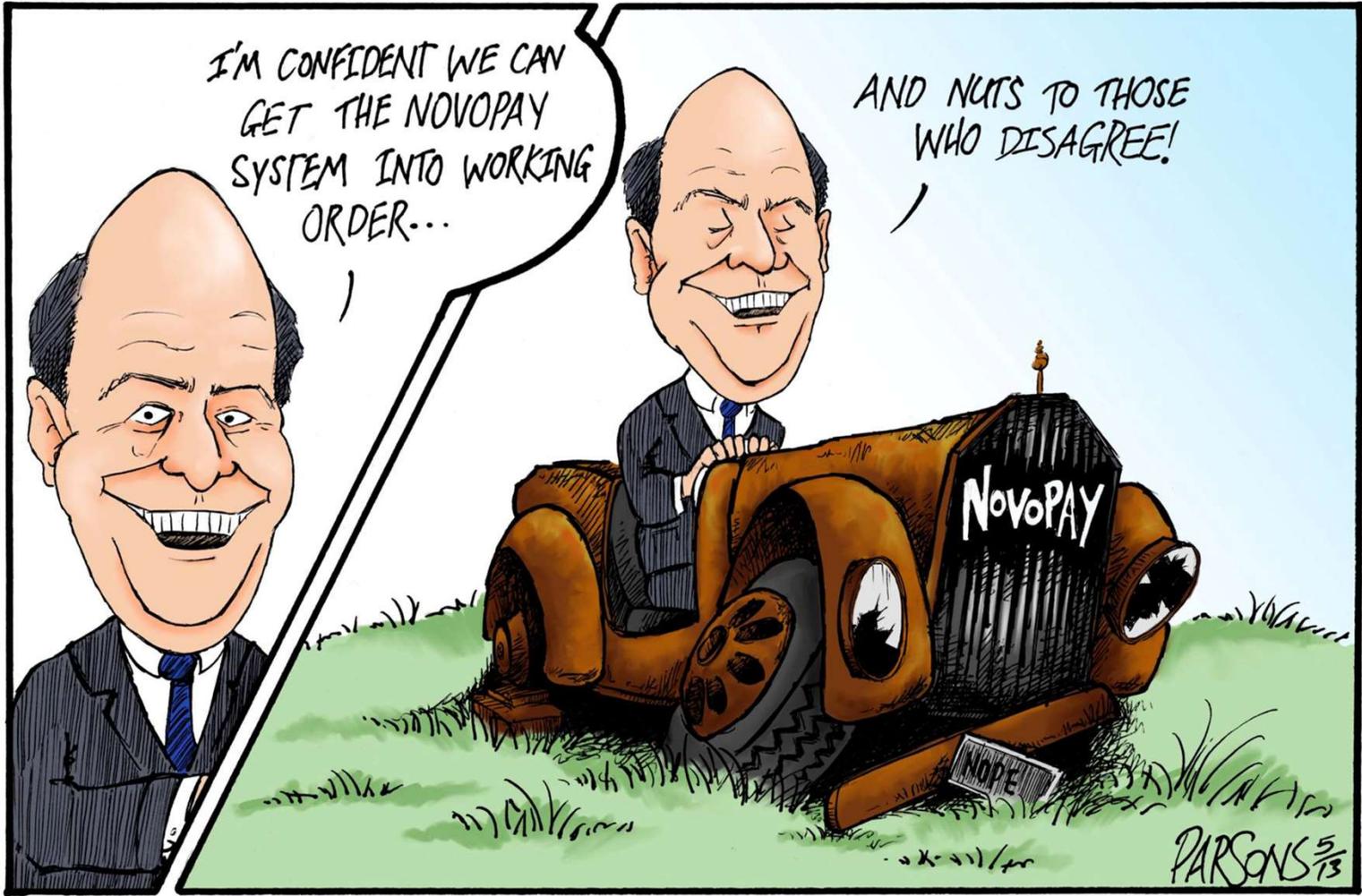
Tom Pullar-Strecker · 16:54, Mar 13 2014



The Government has spent \$33 million trying to sort out the troubled Novopay education payroll system and expects to spend a further \$10m by June, Novopay Minister Steven Joyce has revealed.

New Zealand Educational Institute spokesman Andrew Casidy said the amount was staggering given the system remained "a lemon".

Example





According to you, why did the Novopay project fail?

What could they have done differently to avoid such a failure?

## Why the Novopay project failed

They didn't start with the problem, but jumped to a solution.



- Unanswered user needs
- Poor delivery choices

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They didn't start small, but went for a big bang launch, despite poor user feedback.



- Failed launch
- Vendor lock-in

# EdPay

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**EdPay – a fully online service – has replaced Novopay Online, which was switched off on 20 October 2021.**

EdPay is intuitive and easy to use. We've made it easy for users to get things right – and hard to get them wrong. We've rolled out EdPay functions incrementally, once they were built and tested. EdPay also improves the timeliness and accuracy of schools' payroll information, increases automation, and removes many of the pain points for schools' payroll administrators, particularly processes based on lengthy, manual forms.

## **We engaged with schools early**

We began trialling EdPay with payroll administrators and principals with 11 schools in March 2019, adding a further 15 in May, and increased to 200 in July 2019. Based on their feedback, we offered it to an additional 1,000 schools in September 2019, and rolled it out to the rest before the end of the year. EdPay is now available to all schools and has replaced Novopay Online.

**EdPay** 

**Log in to EdPay**

**Is it better to do nothing then?**

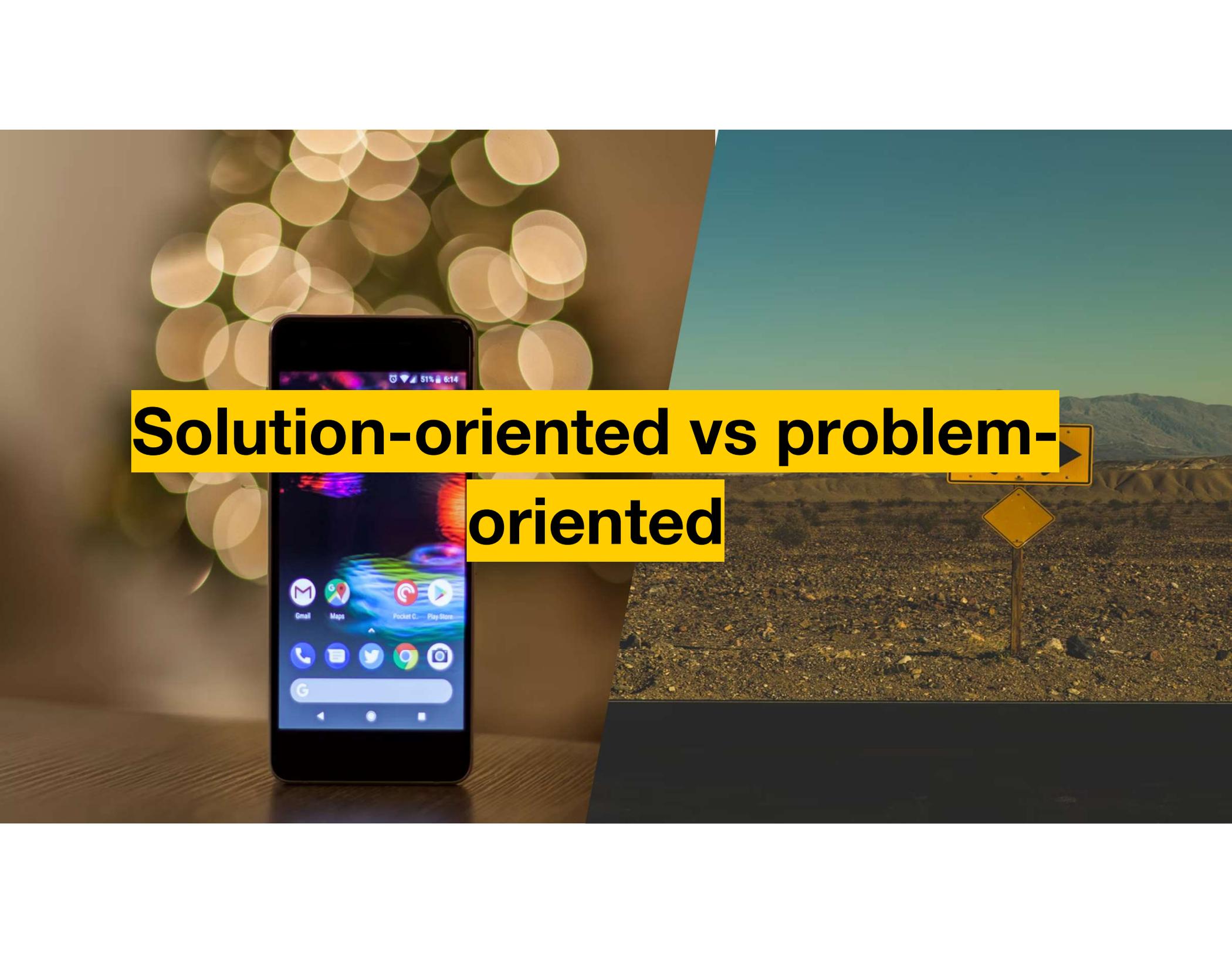


1. The new technology landscape

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# **Solution-oriented vs problem-oriented**

Don't choose a vendor  
or platform until you  
know what you need



The solution should not drive  
the problem (unless you want  
to travel backwards).

A platform and vendor were chosen before any requirements were agreed upon.



Tom Hovey

Jun 21, 2020 · 7 min read · [Listen](#)



**To do** or **not to do**, that is  
the question.



**Portfolio  
balancing**

## Categories of technology investment

- **Creating** or changing technology to gain new value for the organisation or its users
- **Maintaining** the existing technology
- **Renewing** technology
- **Enabling** the delivery of services
- **Reacting** to incidents



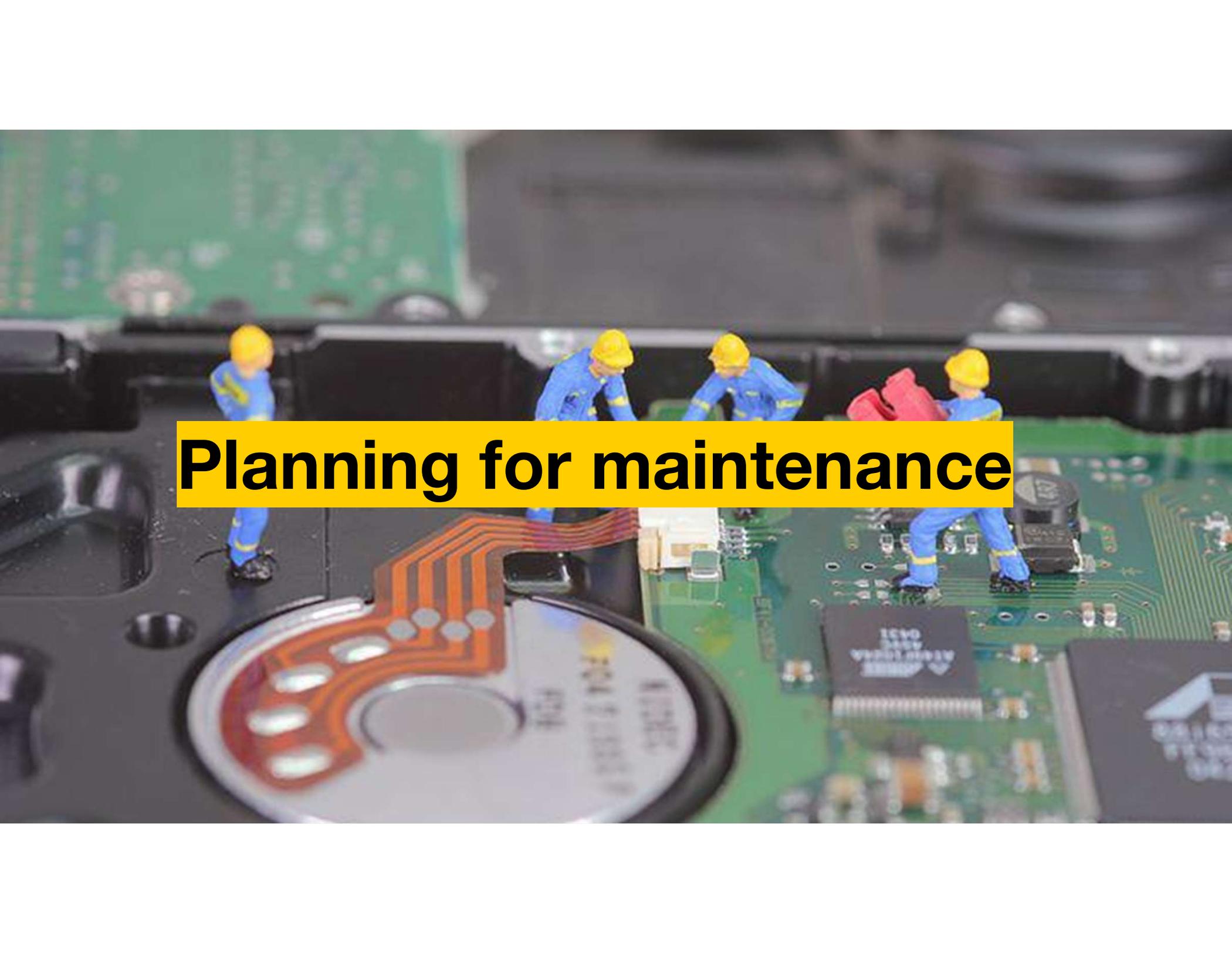
# New vs legacy systems

## Bad reasons for investing in new technology

- The attraction of the 'new'
- Artificial commercial incentives

## When to replace legacy systems

- It is unsupported by the vendor
- It becomes too difficult to update
- It is no longer cost effective
- It becomes inefficient to use
- It cannot integrate with other systems



**Planning for maintenance**

Moving from **projects** to **products** means shifting from a pre-defined scope towards maximisation of outcomes over time.

## **Project-led**

Predictable and  
repeatable

Milestones driven

Difficult to accommodate  
change

## **Product-led**

Outcome-based

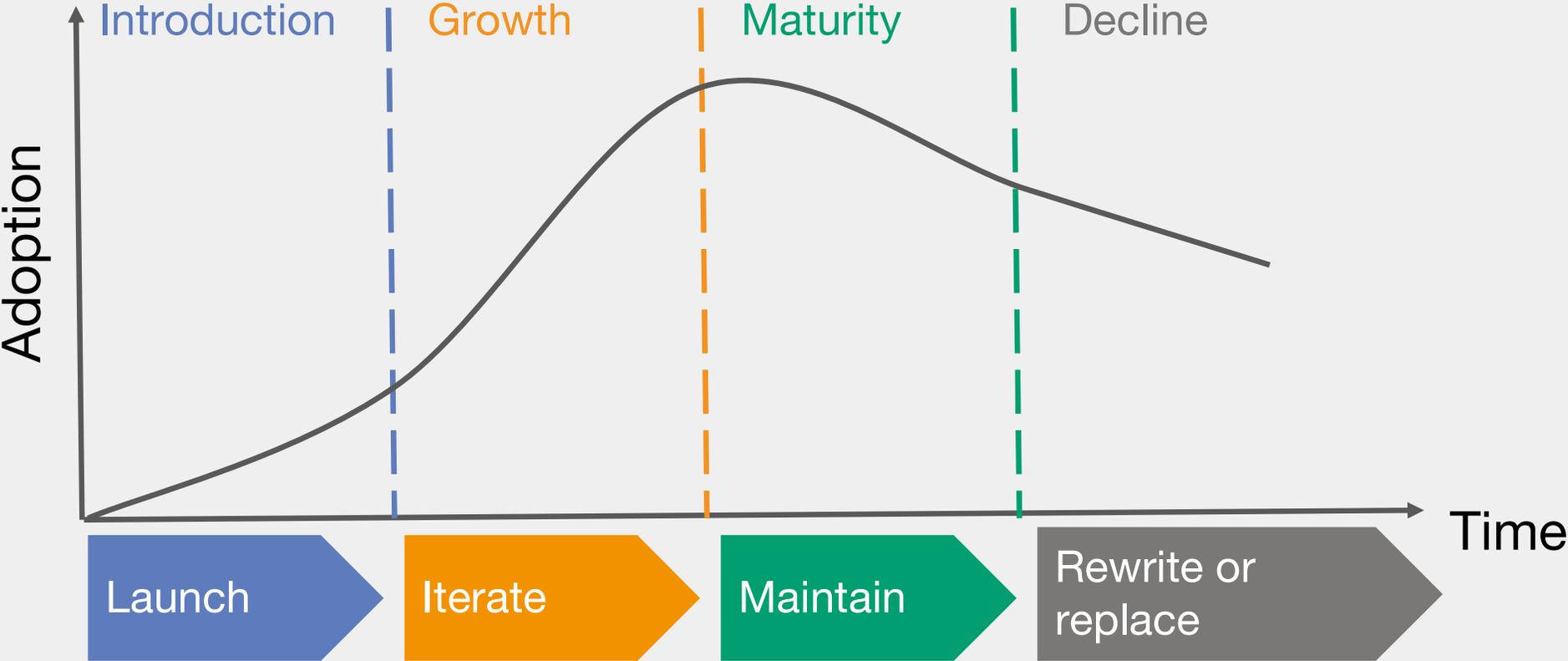
Service-led

Research driven

Adaptable

Continually optimised

# Product lifecycle





**Build vs buy**

**If you want a cup of tea, you  
don't make your own kettle**



Core to mission

Commodity



Varied and unpredictable needs

Known needs

## Build vs buy choices

1. Off-the-shelf vs bespoke software
2. Cloud vs on-premise infrastructure
3. In-house vs outsourced delivery



# Off-the-shelf vs bespoke software

Core to mission

Commodity



**Bespoke**

**Hybrid**

**Off-the-shelf**

Varied and unpredictable needs

Known needs

```
    if (a) {
      for (; o > i; i++)
        if (r = t.apply(e[i], n), r === !1) break
    } else
      for (i in e)
        if (r = t.apply(e[i], n), r === !1) break
  } else if (a) {
    for (; o > i; i++)
      if (r = t.call(e[i], i, e[i]), r === !1) break
  } else
    for (i in e)
      if (r = t.call(e[i], i, e[i]), r === !1) break;
  return e
},
```

```
trim:
  re
} : fu
```

# When to use open source?

```
return null == e ? "" : (e + "").replace(C, "")
```

```
},
```

```
makeArray: function(e, t) {
```

```
  var n = t || [];
```

```
  return null != e && (M(Object(e)) ? x.merge(n, "string" == typeof e ? [e] : e) : h.call(n, e)), n
```

```
},
```

```
isArray: function(e, t, n) {
```

```
  var r;
```

```
  if (t) {
```

```
    if (m) return m.call(t, e, n);
```

```
    for (r = t.length, n = n ? 0 > n ? Math.max(0, r + n) : n : 0; r > n; n++)
```

```
      if (n in t && t[n] === e) return n
```

```
  }
```

## Andrew Larcombe

# Gov Notify & Drupal - Hello Australia and Canada!



If you've ever received an email or SMS from a UK Government service then chances are it's been [sent from the Gov Notify platform](#). Gov Notify is a great example of a platform-oriented approach to government - by using this shared platform instead of building their own notification system, delivery teams can focus their work higher up the [value chain](#), delivering services that meet user needs.

Gov Notify itself is built on open source technologies, but is also [released as open source](#), meaning other organisations and governments can host their own Notify platform and benefit from subsequent feature and security releases.



[GitHub](#)

[User Guide](#)

[SIGN IN](#)

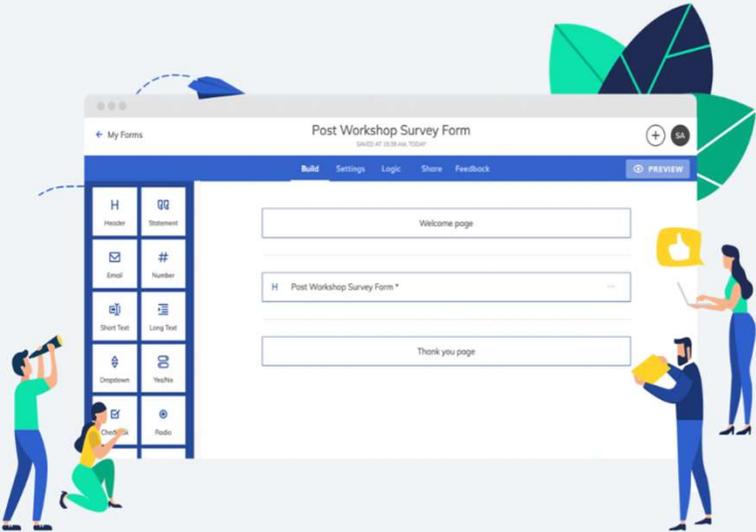
# Build government forms in minutes

100,056 PUBLIC OFFICERS ON OUR PLATFORM

373,725 DIGITAL FORMS DEPLOYED

161,562,167 FORMS HAVE BEEN SUBMITTED

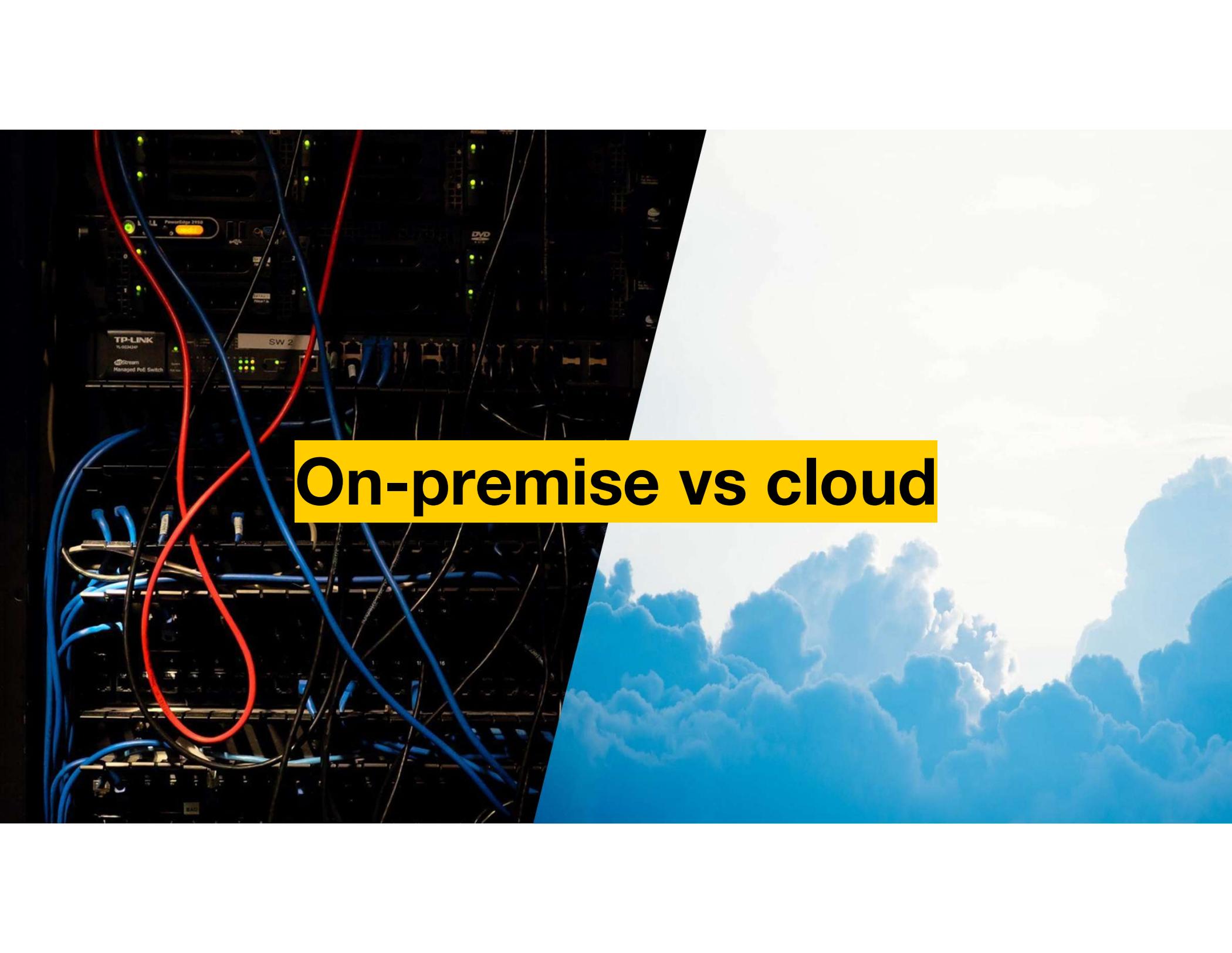
[BUILD YOUR FORM](#)



## The benefits of open source software

- Reduce vendor and technology lock-in
- Offer more flexibility and control
- Save time and money on procurement

Open source is **not free.**



# On-premise vs cloud

Data centre services are **highly**  
**commoditised.**

## Benefits of cloud computing

- Flexibility: scale up or down on short notice
- Cost savings: only pay for what you use
- A reduced need for on-site IT staff
- Reliability

# Key considerations





# Department Circular: Cloud First Policy

YOU ARE HERE: [PRIVATE: POLICIES](#) / [DEPARTMENT CIRCULAR: CLOUD...](#)

## Services

### Infrastructure



### Shared Services



Republic of the Philippines  
Department of Information and Communications Technology

18 January 2017  
DEPARTMENT CIRCULAR  
NO. 2017 – 002

**TO : ALL HEADS OF DEPARTMENTS, BUREAUS, OFFICES AND OTHER AGENCIES OF THE NATIONAL GOVERNMENT, INCLUDING CONSTITUTIONAL COMMISSIONS, CONGRESS, THE JUDICIARY, OFFICE OF THE OMBUDSMAN, STATE UNIVERSITIES AND COLLEGES, GOVERNMENT-OWNED OR - CONTROLLED CORPORATIONS. LOCAL GOVERNMENT UNITS AND ALL**

## GovNet Sitemap

- [▶ Overview](#)
- [▶ Process Flow](#)
- [▶ GovNet Traffic Sum](#)

## NGDC Sitemap

- [▶ Overview](#)

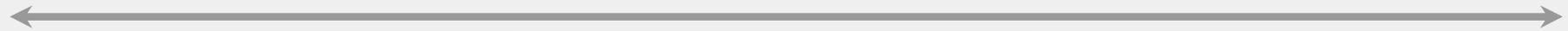
Opting for the cloud frees up  
technologists to be part of digital  
teams.



# In-house vs outsourced delivery

Core to mission

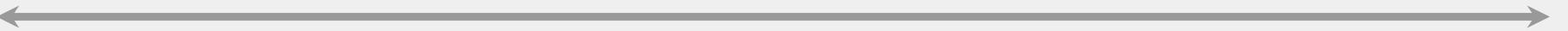
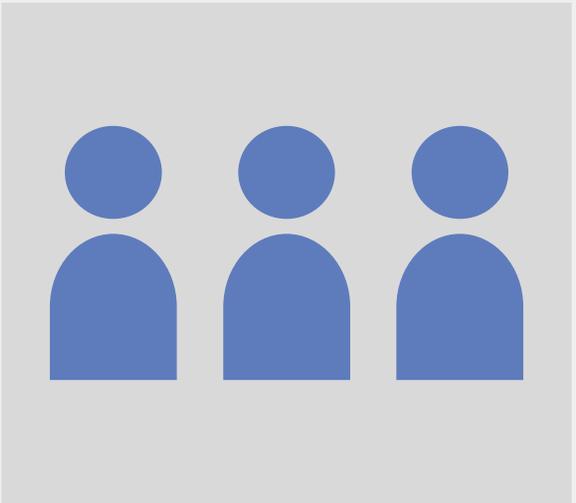
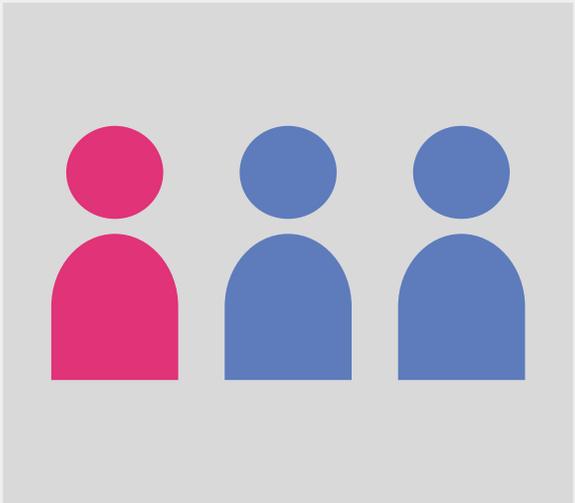
Commodity



**Insource**

**Hybrid**

**Outsource**



Varied and unpredictable needs

Known needs

A digital service requires **long-term ownership** and should be treated as a **product**.



Think about your organisation.

What good technology choices has it made?

What do you think could have been done differently?

1. The new technology landscape

2. Case study

3. Making choices

**4. Risk management**

**Do's**

Dont's



We've all been part of projects that didn't work.

Think about a time when you were involved in a project or initiative that failed or was not as successful as you hoped. Why did that happen?

A close-up photograph of a person's hand holding a row of colorful wooden blocks on a light blue surface. The blocks are in various colors: light wood, blue, red, white, and orange. From left to right, the blocks are standing upright, but they gradually lean more to the right, with the last few blocks (orange, red, and white) having fallen over. The background is a blurred image of a person's face, suggesting a child or young adult.

Things will go **wrong**.

Make it **safe to fail**.

## Do's

- Implement incrementally

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- Keep options opened

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- Keep options opened
- Learn from mistakes

## Do's

- Implement incrementally
- Keep options opened
- Learn from mistakes
- Manage change

1. The new technology landscape

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Do's

**Dont's**

## Don'ts

- Go with the hype

## Don'ts

- Go with the hype
- Try to automate everything

## Don'ts

- Go with the hype
- Try to automate everything
- Focus on technology rather than the team

“Many governments already recognise the importance of technology. But [...] **the big challenges are not technical.**”

Professor Francesco Marcini, Lee Kuan Yew School of Public Policy

## Takeaways

- Internet, mobile and cloud technologies have reshaped the way governments build and deliver services.
- Governments have much to do, with limited time, money and people. It's therefore important for organisations to develop a balanced portfolio of technology projects.
- For each project, they need to make tactical decisions (e.g. off-the-shelf vs bespoke software, use of open source building blocks, in-house vs outsourced delivery).
- Whatever they decide, failure is likely. To manage risks,

Next module:

# Navigating barriers to digital government



ASIA AND THE PACIFIC

**Regional  
Innovation Centre**

**public  
digital**

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