

Understanding the current state of digital twins within the defence sector

Prof. John Erkoyuncu

Head of the Centre for Digital Engineering and Manufacturing

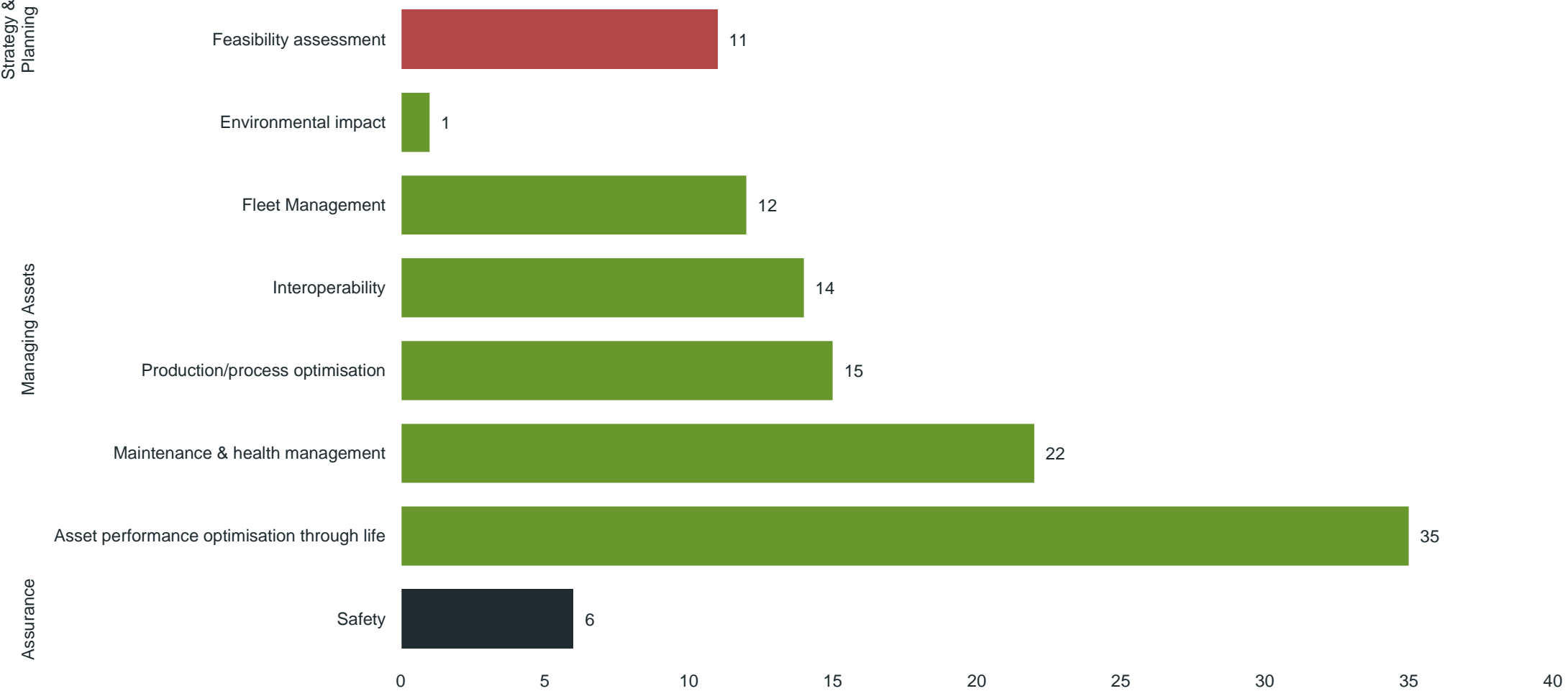
Cranfield University

E: j.a.erkoyuncu@cranfield.ac.uk

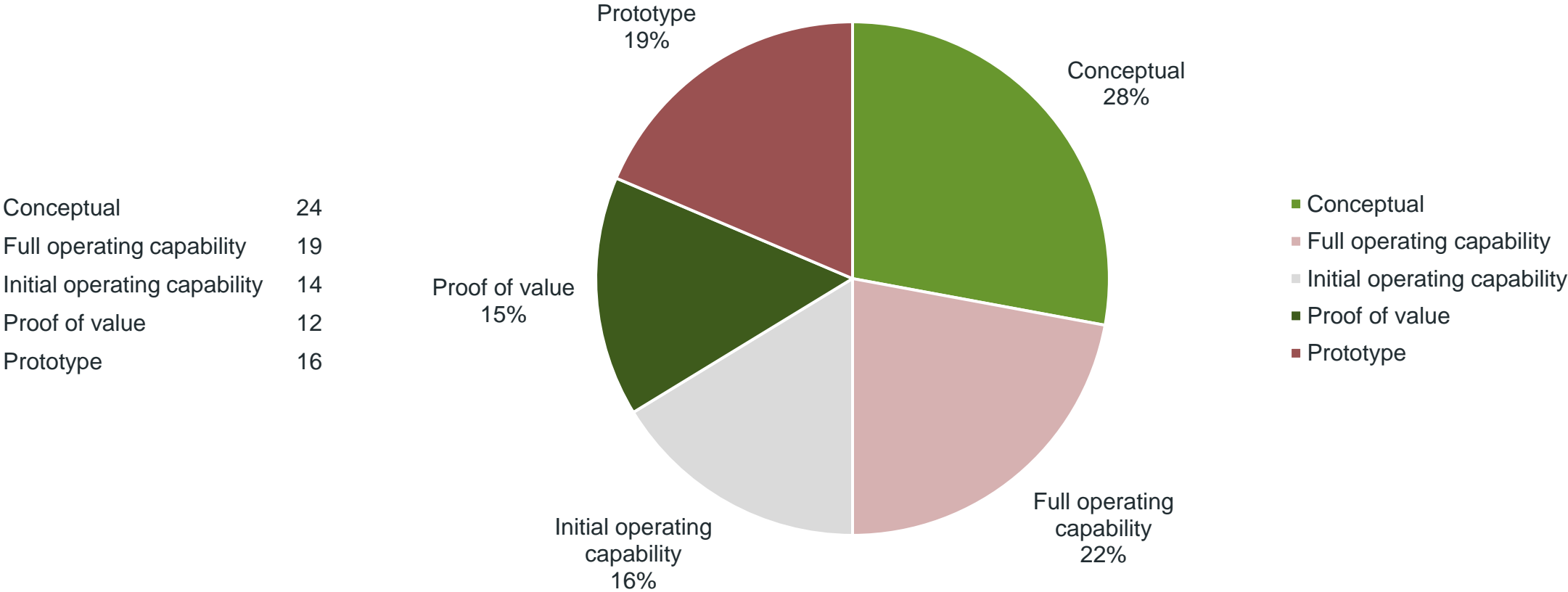
What business challenge is your digital twin project looking to address?

Categories	Subcategories	Definition
Assurance	Safety	In this field are included all the challenges regarding the safety of the system.
Managing Assets	Maintenance & health management	In this field are included all the challenges regarding the health monitoring; increasing availability; monitoring of the remaining useful life; management of resources to perform maintenance; degradation assessment; increasing the endurance of the asset
Managing Assets	Asset performance optimisation through life	In this field are included all the challenges regarding optimisation of the asset performance throughout its life cycle including modelling and simulation to find optimal working operation; historic, current, or predicted conditions; performance validation;
Managing Assets	Production/process optimisation	In this field are included all the challenges regarding optimisation of the production processes, such as design process, development process, manufacturing process
Managing Assets	Interoperability	In this field are included all the challenges regarding the interoperability of different systems, such as cross-department communication,
Managing Assets	Fleet Management	In this field are included all the challenges regarding the management of a fleet of assets.
Managing Assets	Environmental impact	In this field are included all the challenges regarding the monitoring of the environmental impact
Strategy & Planning	Feasibility assessment	In this field are included all the challenges regarding helping the enterprises to understand the digital maturity level and what tools they require; IT support

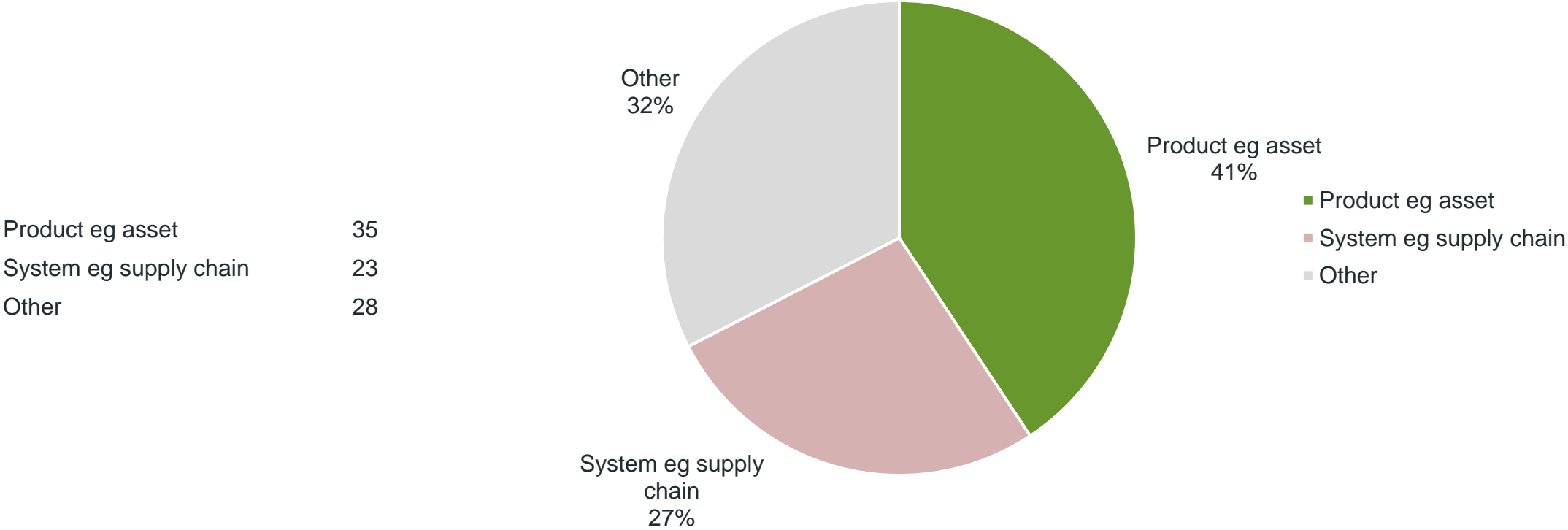
What business challenge is your digital twin project looking to address?



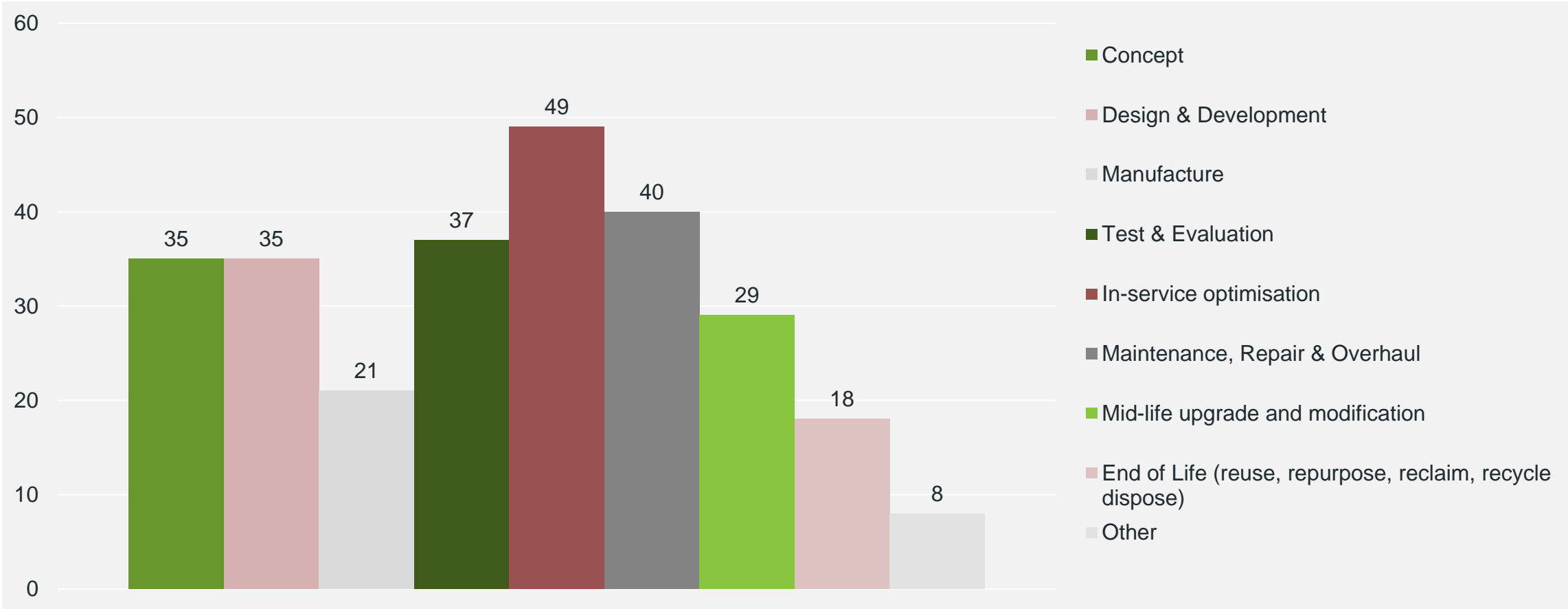
What level of maturity is your project?



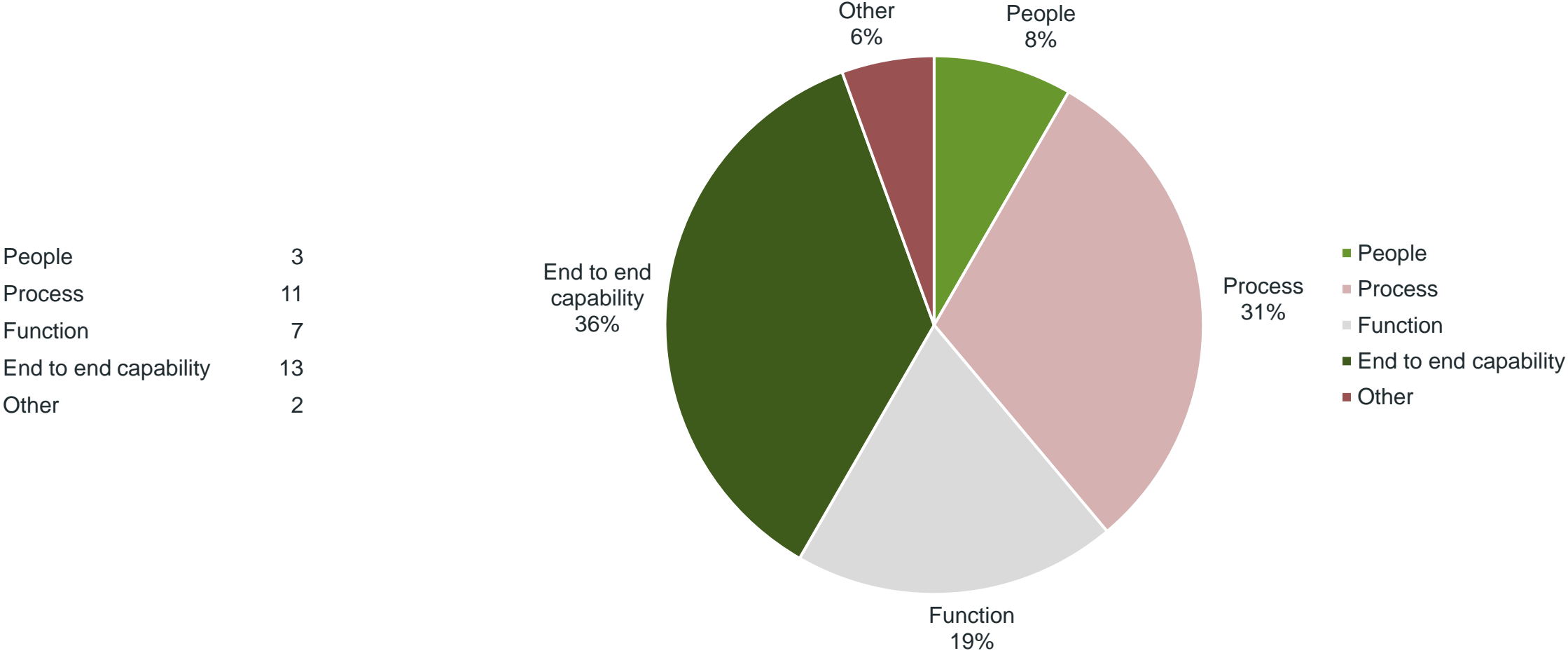
What is the theme of digital twin application?



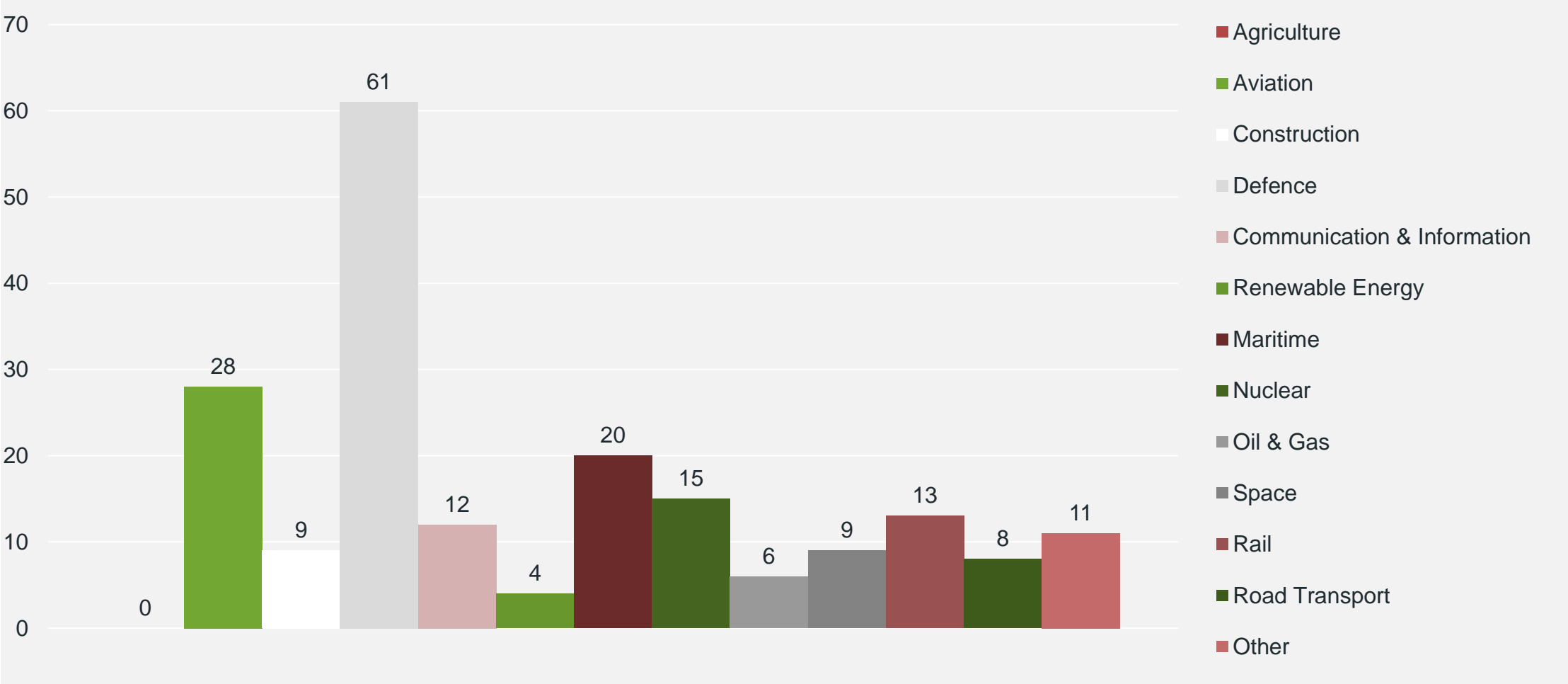
What areas are applicable to your digital twin?



What is the complex system scope or focus?

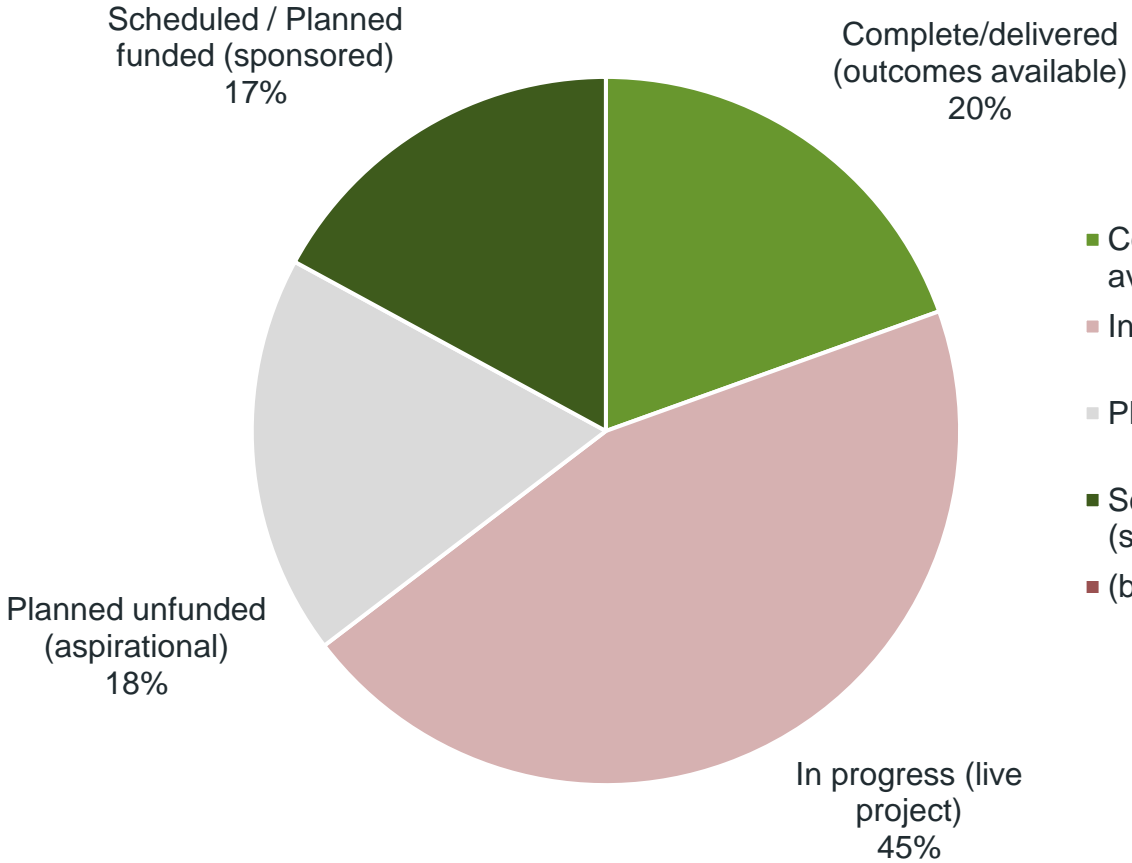


What sector is your digital twin applied to?



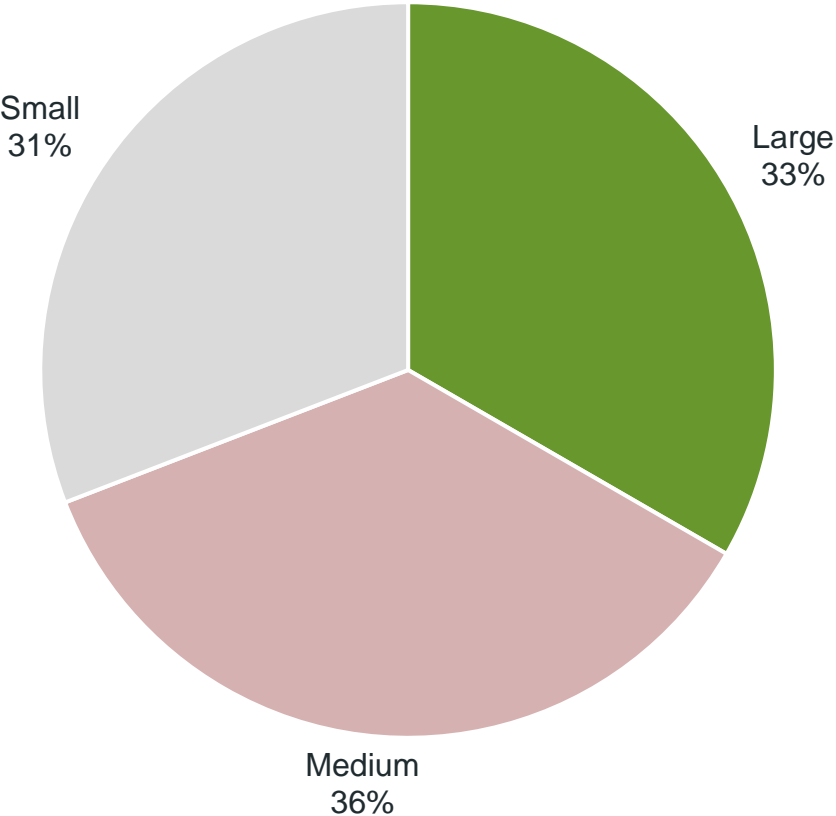
Is your project....

Complete/delivered (outcomes available)	16
In progress (live project)	37
Planned unfunded (aspirational)	15
Scheduled / Planned funded (sponsored)	14



- Complete/delivered (outcomes available)
- In progress (live project)
- Planned unfunded (aspirational)
- Scheduled / Planned funded (sponsored)
- (blank)

What is the scale of project?

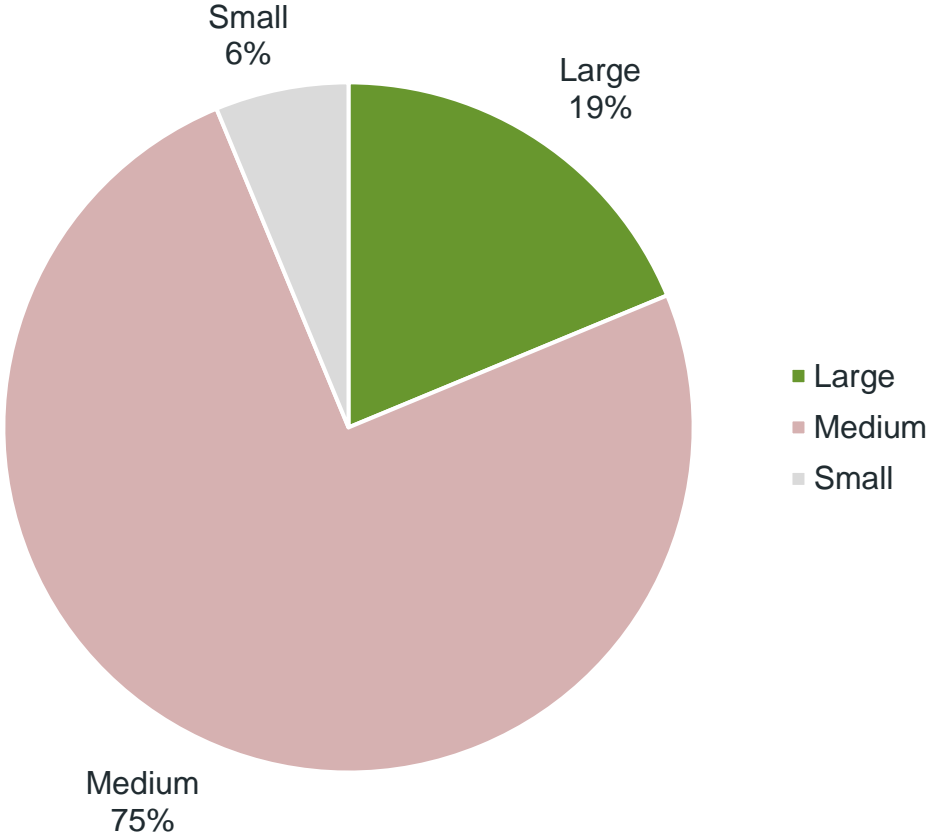


Large 27
Medium 29
Small 25

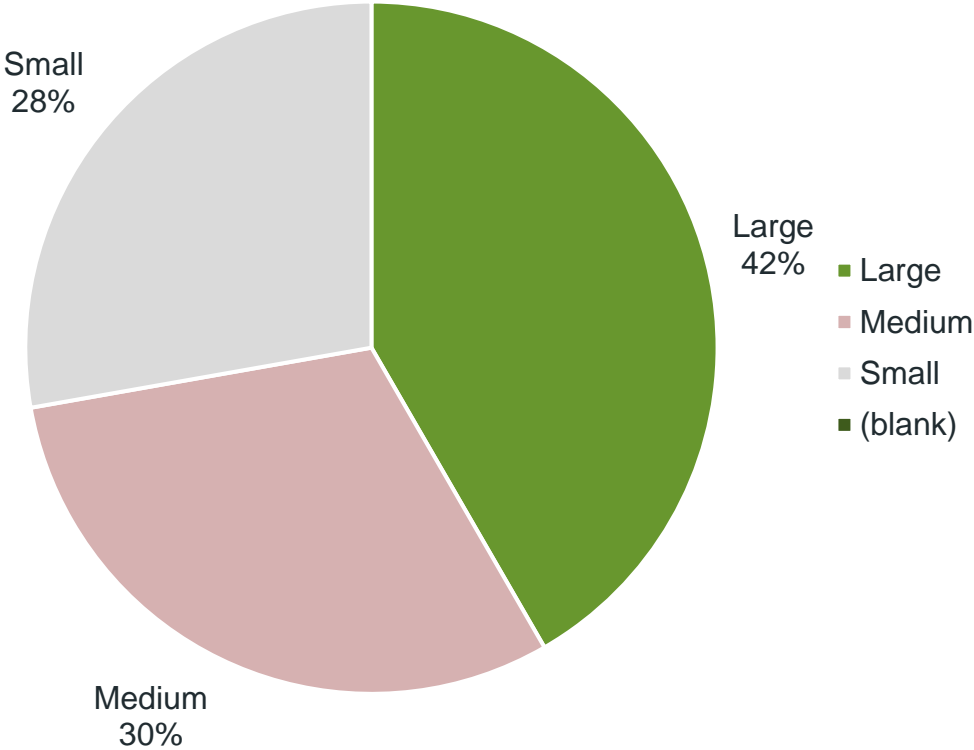
- Large
- Medium
- Small
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What is the scale of project? - Filters

Completed projects

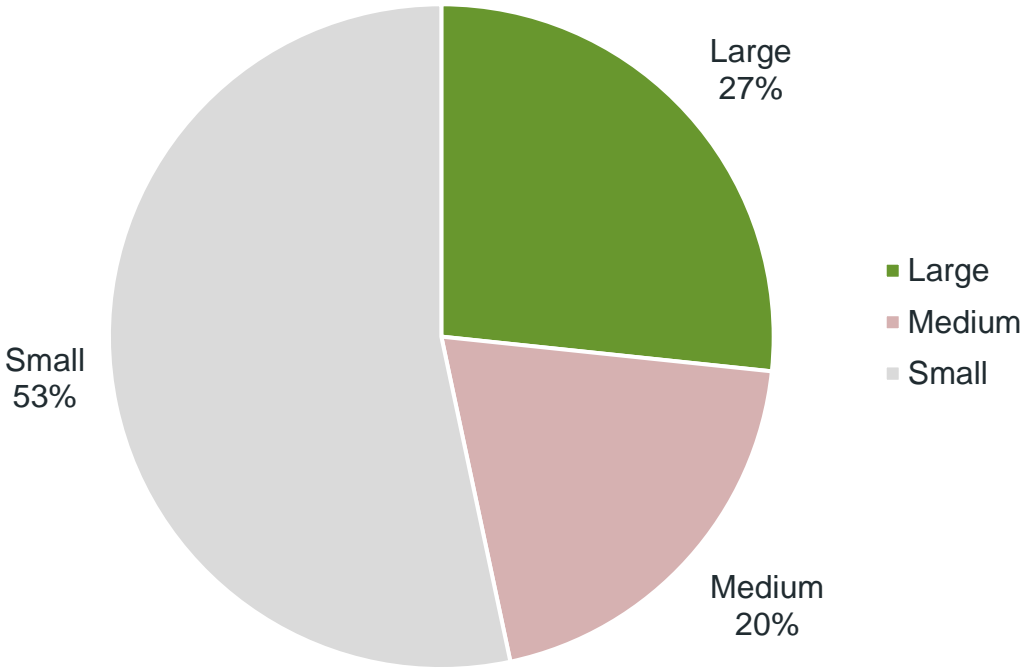


In progress projects

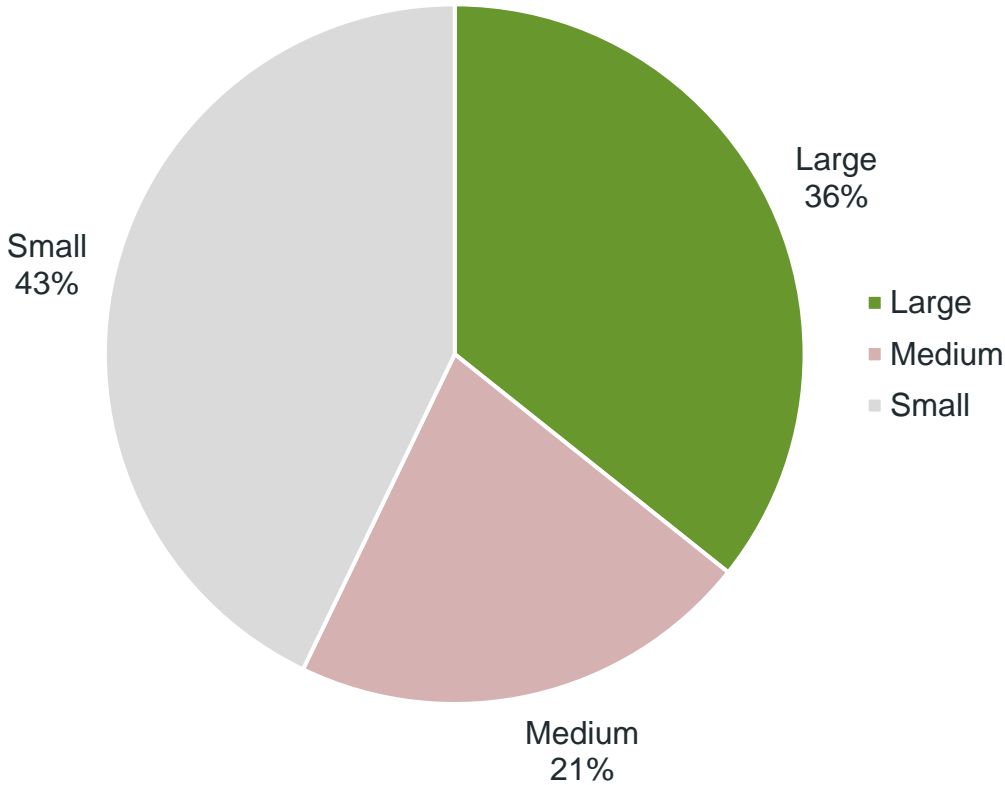


What is the scale of project? - Filters

Planned unfunded projects

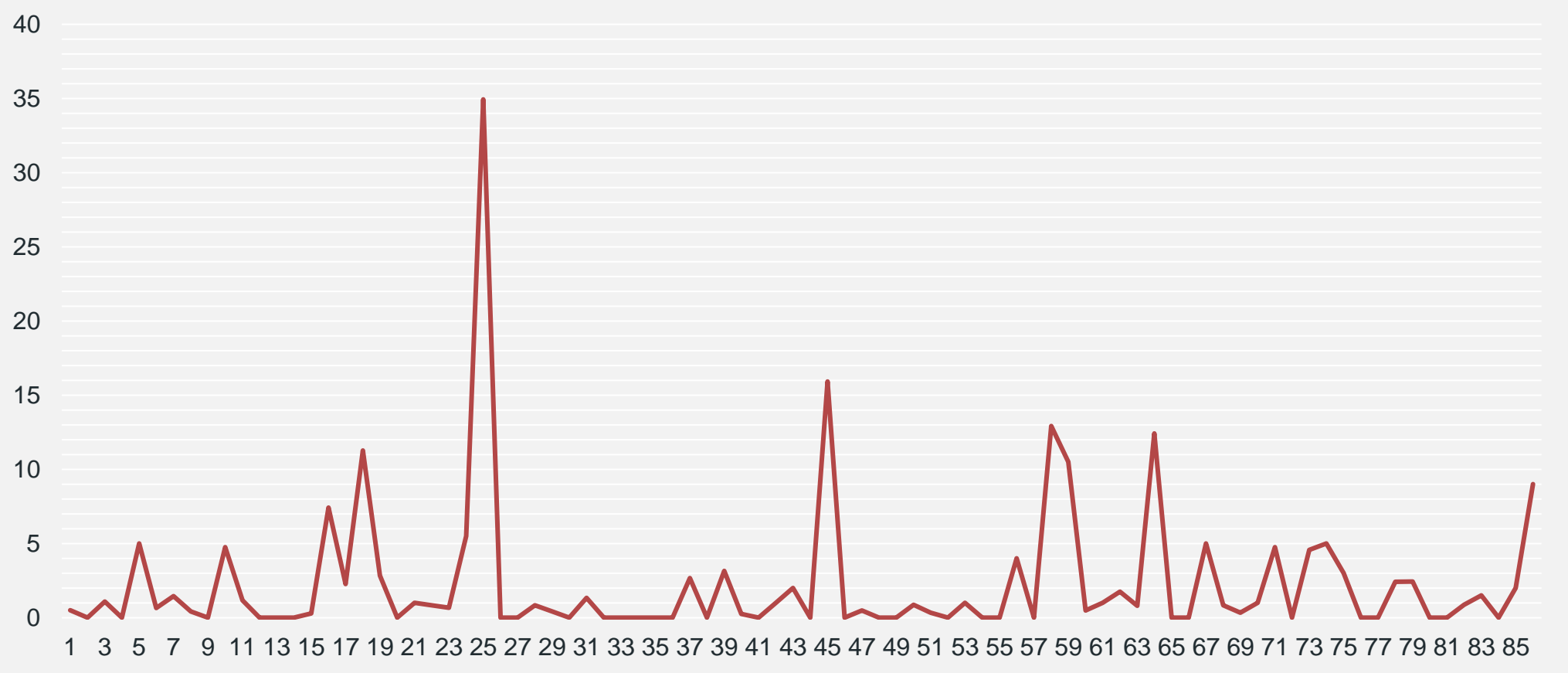


Scheduled funded projects



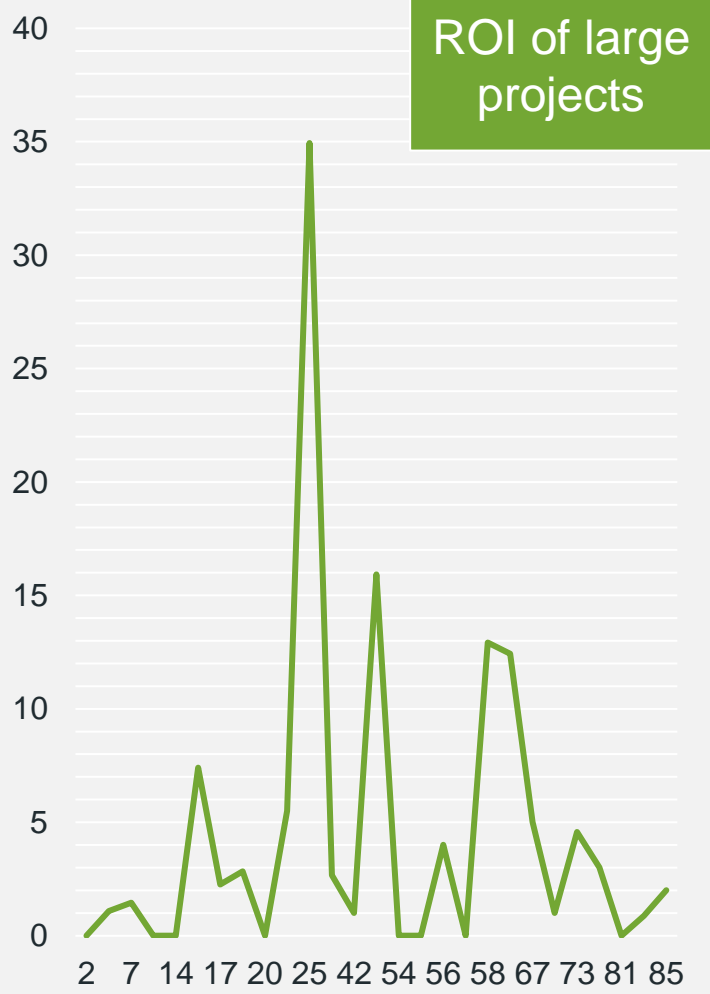
Estimated ROI [in years]

No. of years for ROI

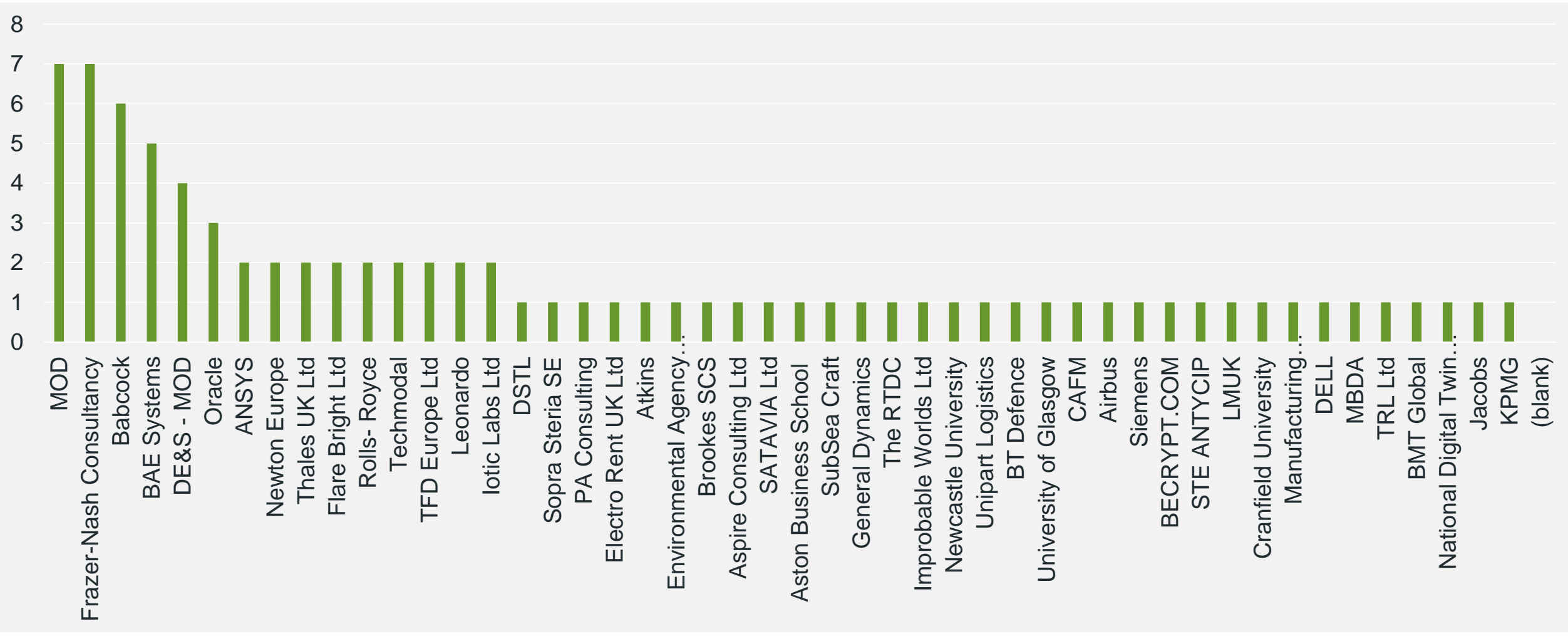


Respondent ID

Estimated ROI [in years] - Filters



Organisations involved



Conclusions

- Significant and growing interest in digital twins
- Wide range of application areas and project sizes
- Use across the life cycle of complex engineered assets and processes
- Further need for ROI type analysis to provide evidence on benefits