

Digital researchers and data experts

We create digital tools  
to explore academic  
research in new ways.

**PRACTICES**



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**Dr. Arianna Ciula**

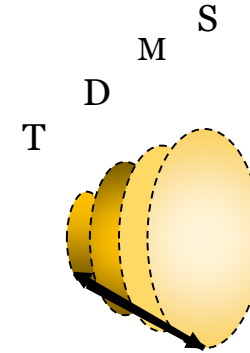
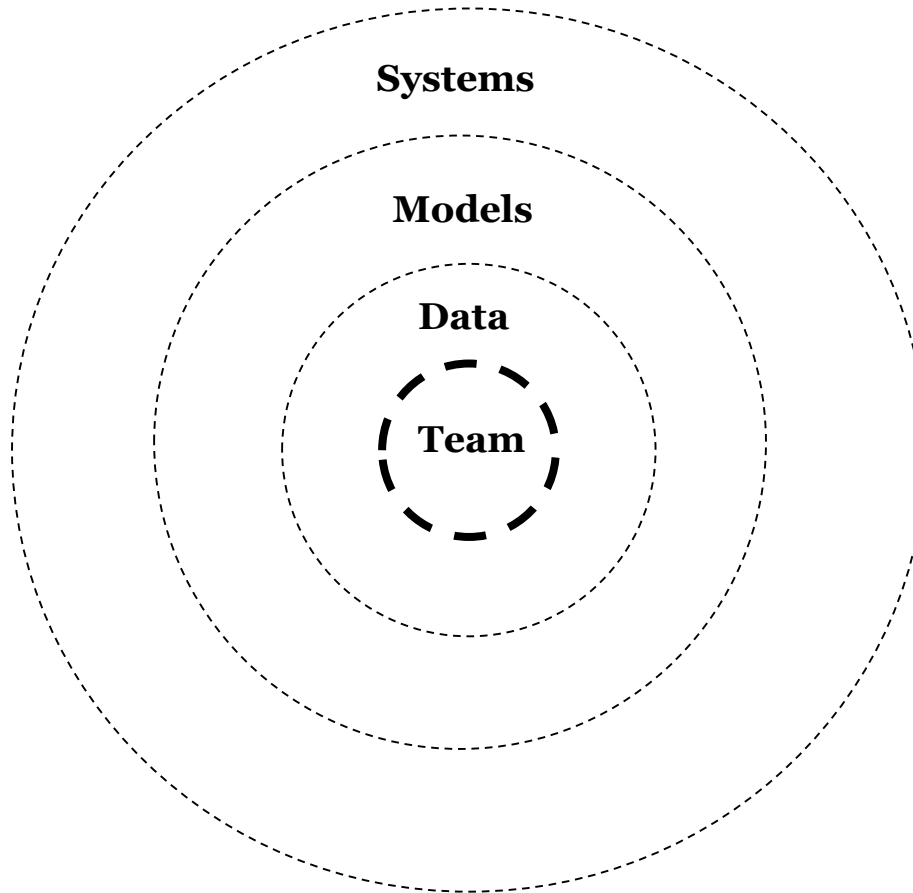
Deputy Director of King's Digital Lab

Senior Research Software Analyst

@ariciula

arianna.ciula@kcl.ac.uk

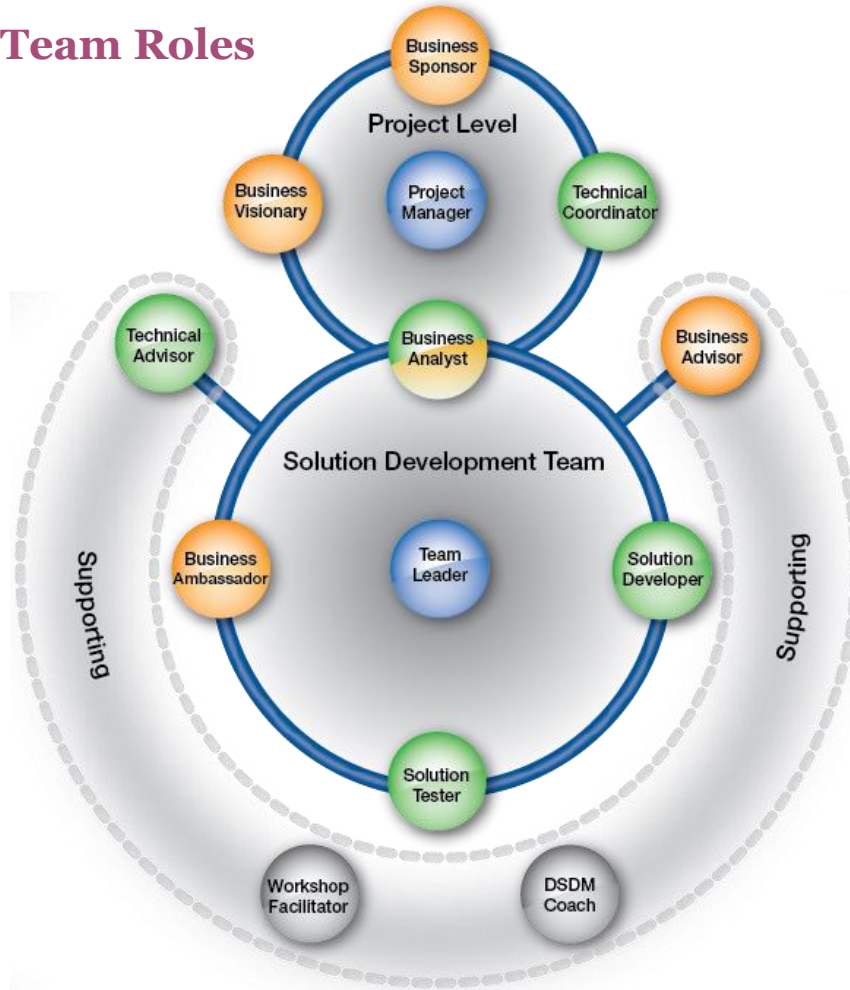




Co-constitution  
(bidirectional  
influence &  
dependencies)

Ciula and Smithies  
(forthcoming), Sustainability and  
modelling at King's Digital Lab.

## Team Roles



### Research Software Engineering roles around:

- Research and analysis
- Design (UI/UX)
- Development
- Management

(of projects and of systems)

See the website of the [Research Software Engineers Association](#).

### Alignment to **Agile DSDM**

Agile Business Consortium (2014), *The DSDM Agile Project Framework*. Chapter 7: [Roles and Responsibilities](#).

Image ©Agile Business Consortium Limited.

## Team Roles

Research Software Engineering		IT Business Support
<p><i>'Academic' promotions process</i></p> <p><b>KDL</b></p> <p>Research active:</p> <ul style="list-style-type: none"> <li>• Permanent academic.</li> <li>• Post-doctoral.</li> <li>• Research Associates.</li> </ul>	<p><i>'Holistic' promotions process</i></p> <p>Research intensive:</p> <ul style="list-style-type: none"> <li>• PI / Co-I.</li> <li>• Analysis.</li> <li>• Design.</li> <li>• Engineering.</li> <li>• Data modelling (etc).</li> </ul> <p>Research support:</p> <ul style="list-style-type: none"> <li>• Linux admin.</li> <li>• Desktop support.</li> <li>• HPC.</li> </ul>	<p><i>Professional Services Promotions Process</i></p> <p>Research support:</p> <ul style="list-style-type: none"> <li>• IT business support.</li> <li>• Web development.</li> </ul>

Promotion process aligned to the RSE continuum.

See Smithies (2019), [The Continuum Approach to Career Development](#).



Structure of Team Role Description

Role (e.g. Analyst; Software Engineer; Project Manager; UI/UX Designer) - Senior & Principal

Overview			
○	Position Purpose	Responsibilities	Key Duties
	Key Relationships		Time %
	Position Duties	...	....

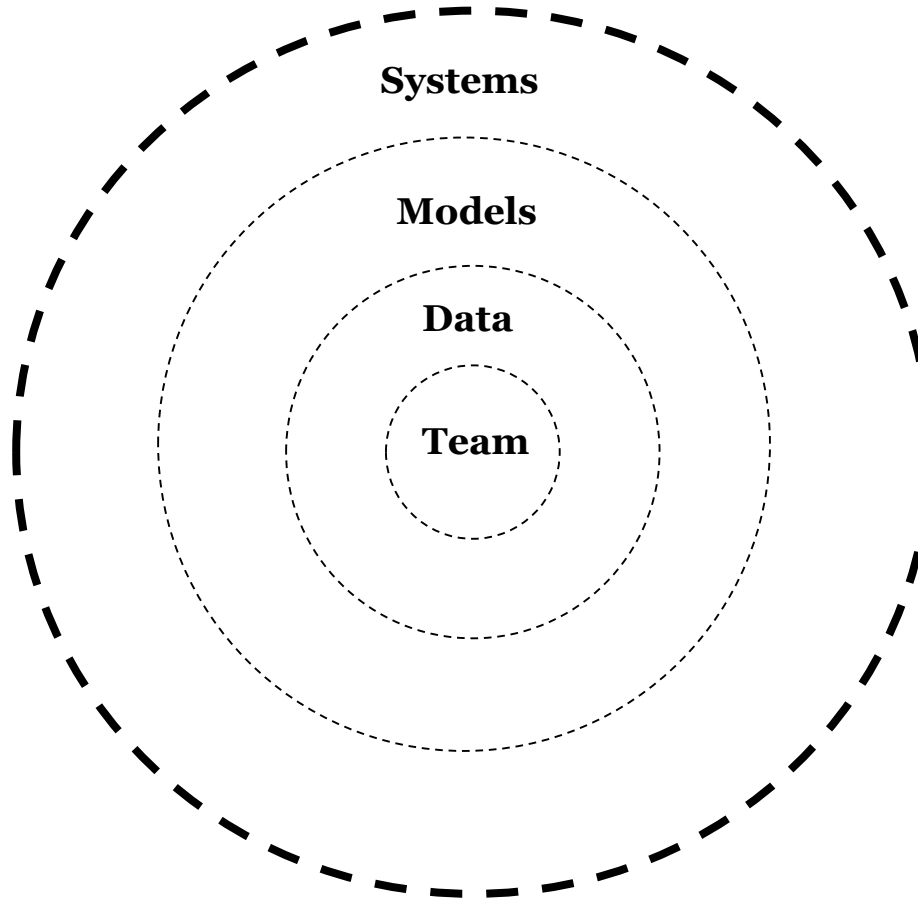
SFIA Alignment (see <https://sfia-online.org> for detailed information about Levels of Responsibility & Professional Skills)

SDLC Roles

Person Specifications (essential and domain specific skills)

Responsibilities	Key Duties	Time %
Research Implementation	<ul style="list-style-type: none"> <li>Produce technical solutions, using tools and methods including but not limited to TEI-XML, high-level programming languages, RDBMS software.</li> </ul>	10%
Research Analysis	<ul style="list-style-type: none"> <li>Deploy existing domain knowledge, or rapidly accumulate more, to understand the computational algorithms, requirements and interfaces involved in a research programming project.</li> <li>Produce solution overview documents, detailing technical requirements, timelines, and cost, suitable for inclusion in funding bids.</li> <li>Work with colleagues across the institution (including both eResearch and IT) to produce ontologies, data models, and documentation to support the production of technical research outputs.</li> </ul>	30%
Project Management	<ul style="list-style-type: none"> <li>Take responsibility for the design and delivery of technical solutions, and their integration into wider institution technical frameworks and strategies.</li> </ul>	20%
Teaching	<ul style="list-style-type: none"> <li>Contribute to training initiatives organized by eResearch teams, including introductory research analysis courses.</li> <li>Provide online and face to face support, and associated documentation, for staff and students using software built or supported by eResearch teams.</li> </ul>	10%
Personal research	<ul style="list-style-type: none"> <li>Develop a personal research agenda, capable of generating external funding, as either PI or Co-I.</li> <li>Contribute to conferences, research papers, and research projects.</li> </ul>	10%
Research Development	<ul style="list-style-type: none"> <li>Work with colleagues across the institution (including both eResearch and IT) to produce technical outputs (code, databases, web applications, databases).</li> </ul>	5%
System, Software, and Data Maintenance & Support	<ul style="list-style-type: none"> <li>Monitor eResearch systems and tools, and patch / upgrade as required to ensure security and performance.</li> <li>Produce technical and end user documentation to aid the use, support, and maintenance of eResearch systems and tools.</li> </ul>	5%
Self-directed learning	<ul style="list-style-type: none"> <li>Maintain and improve skills in research software engineering through independent study and training courses.</li> </ul>	5%
Community outreach	<ul style="list-style-type: none"> <li>Build or maintain relationships across the UK and international eResearch, eInfrastructure, and RSE communities.</li> <li>Attend community events such as seminars and workshops.</li> <li>Contribute expertise to internal and external committees and working groups.</li> <li>Contribute to department and institution meetings and events.</li> </ul>	5%

Example of analyst role

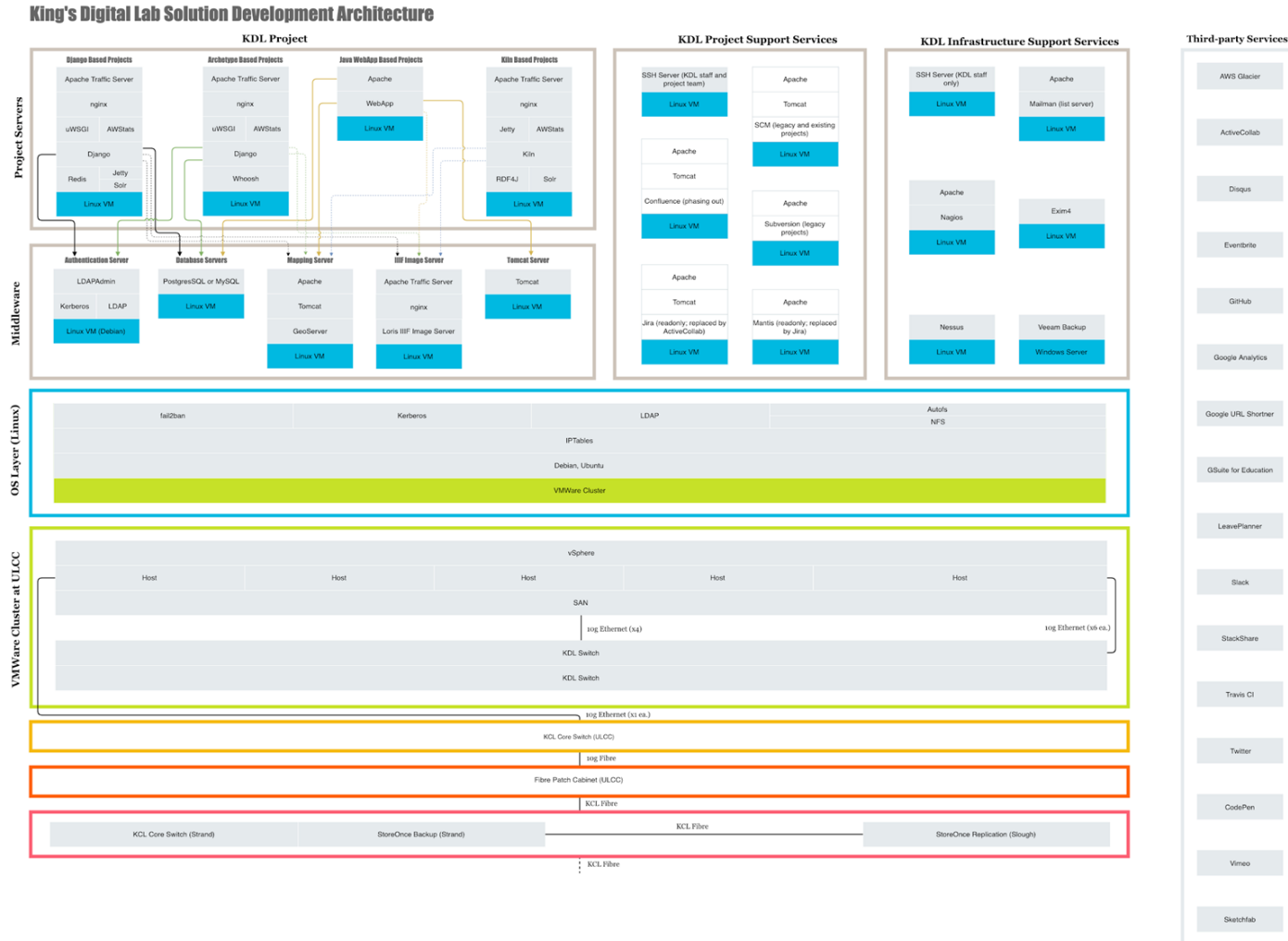


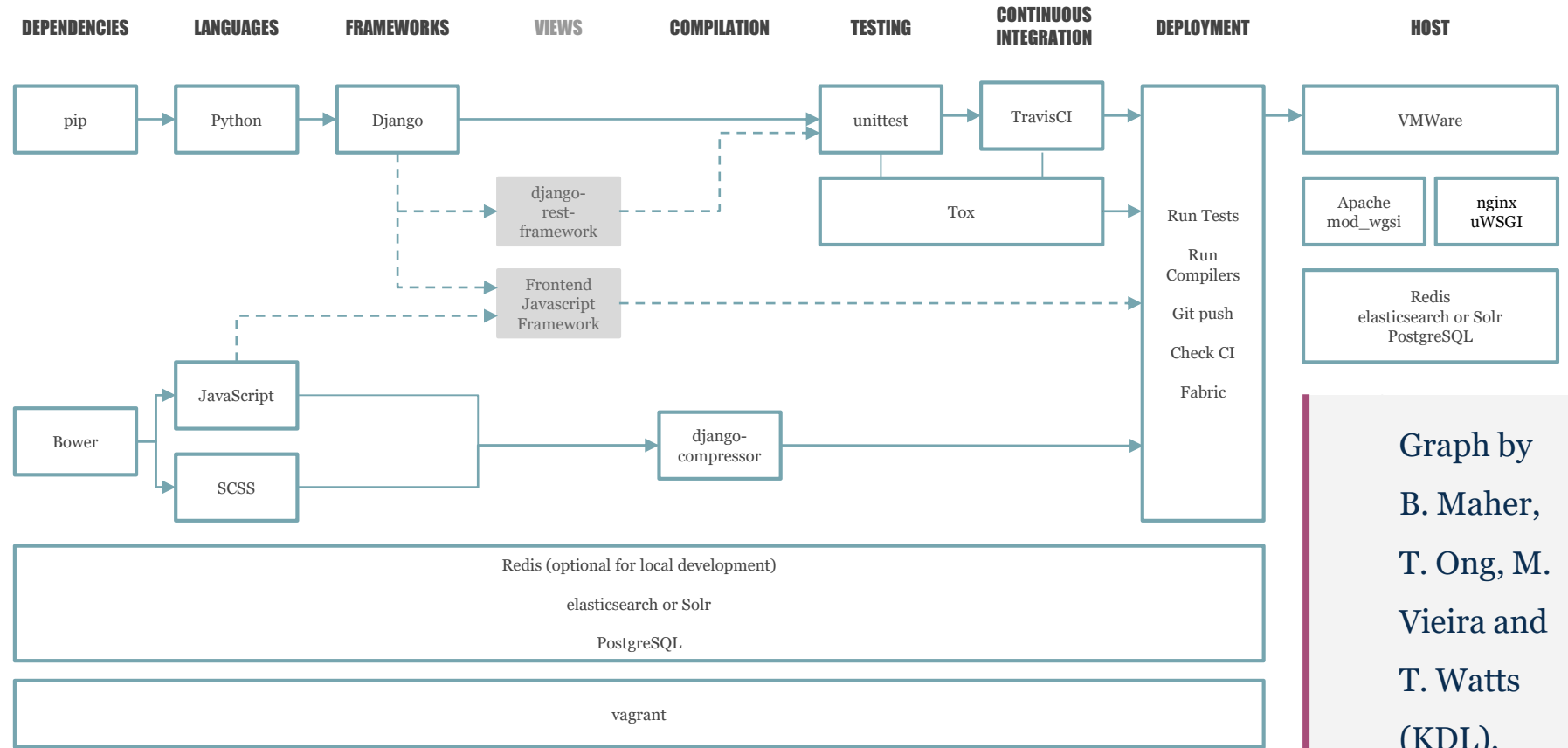
Ciula and Smithies (forthcoming).



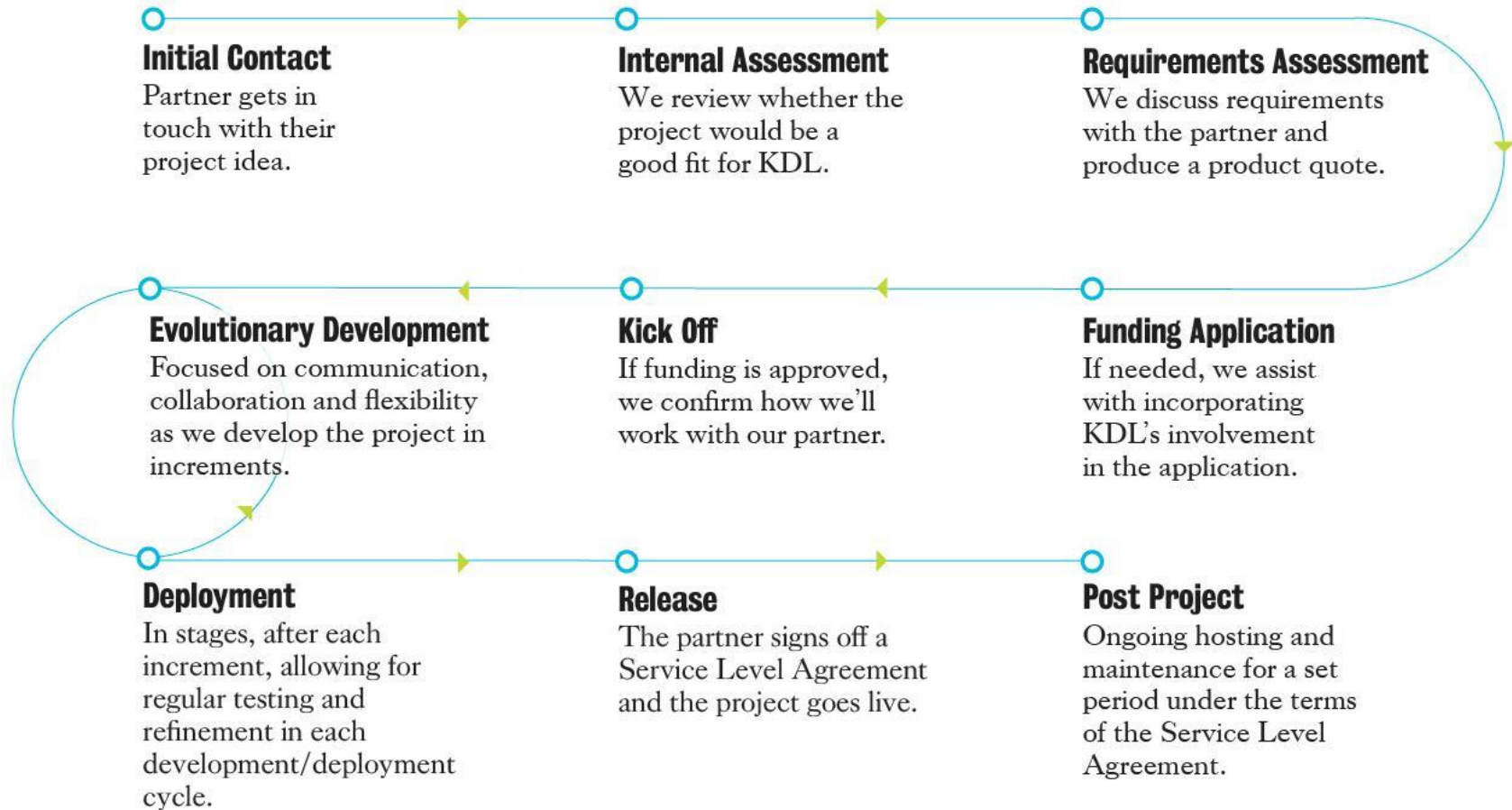
## Solution Development Architecture

Graph by  
B. Maher,  
T. Ong,  
M. Vieira,  
and  
T. Watts  
(KDL).

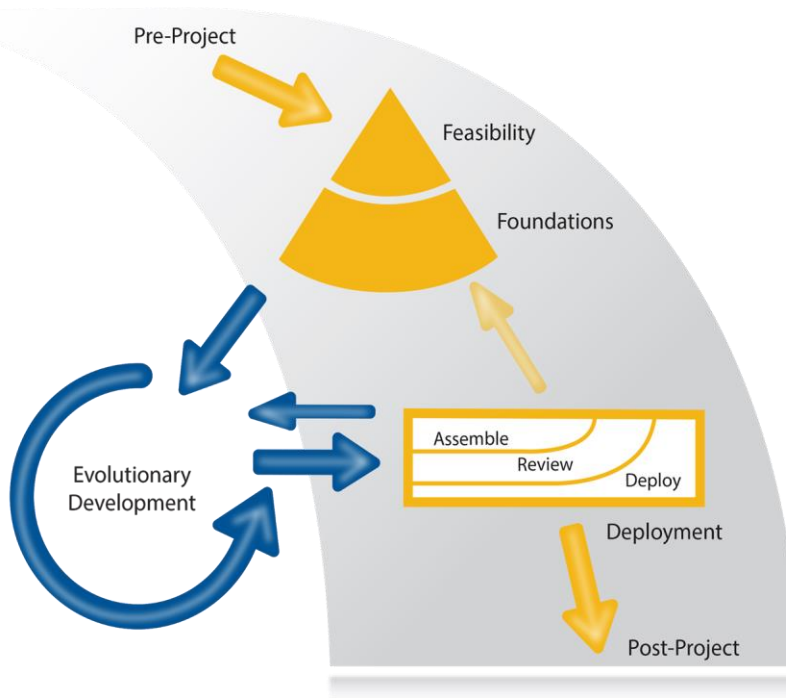




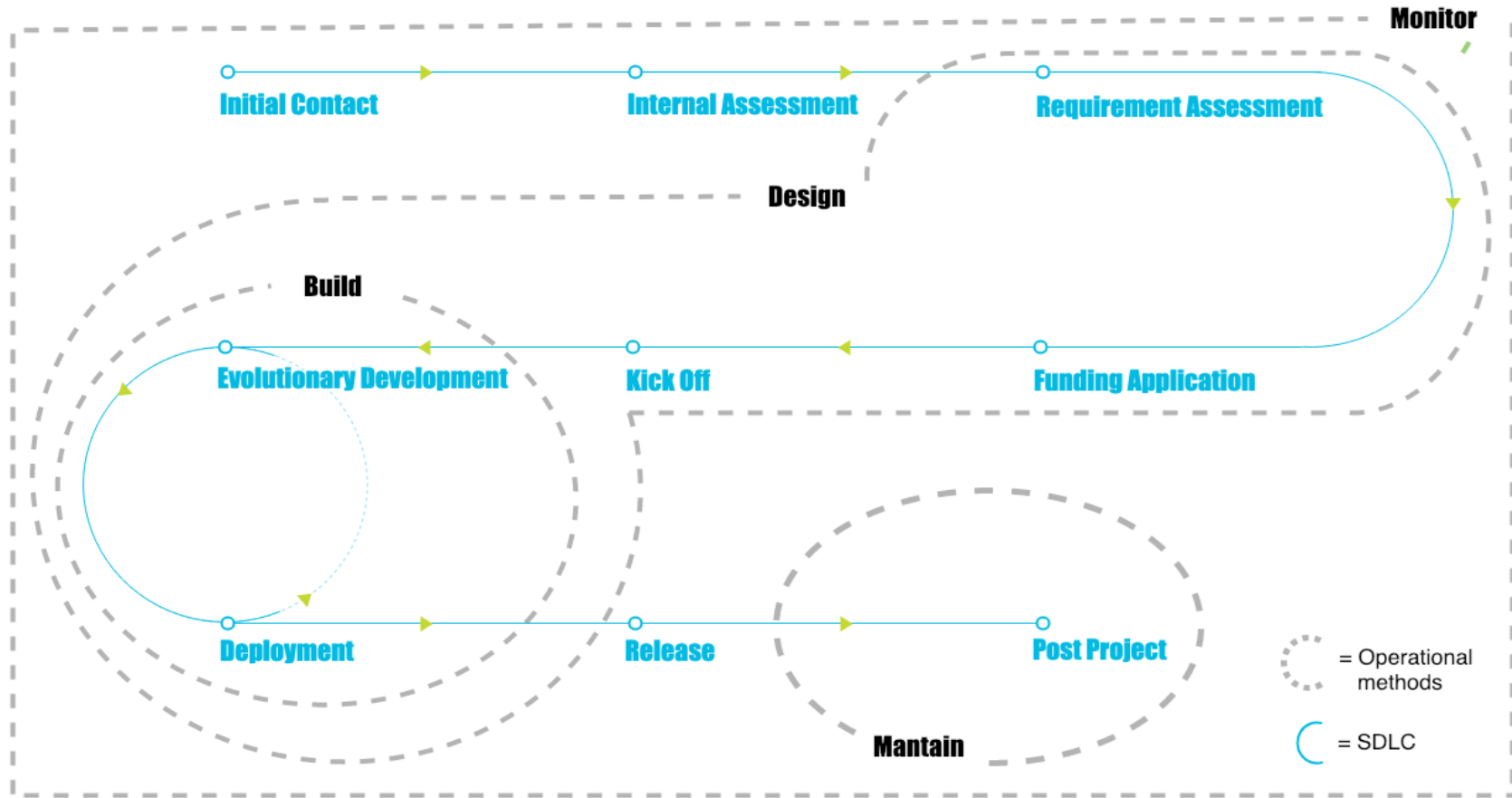
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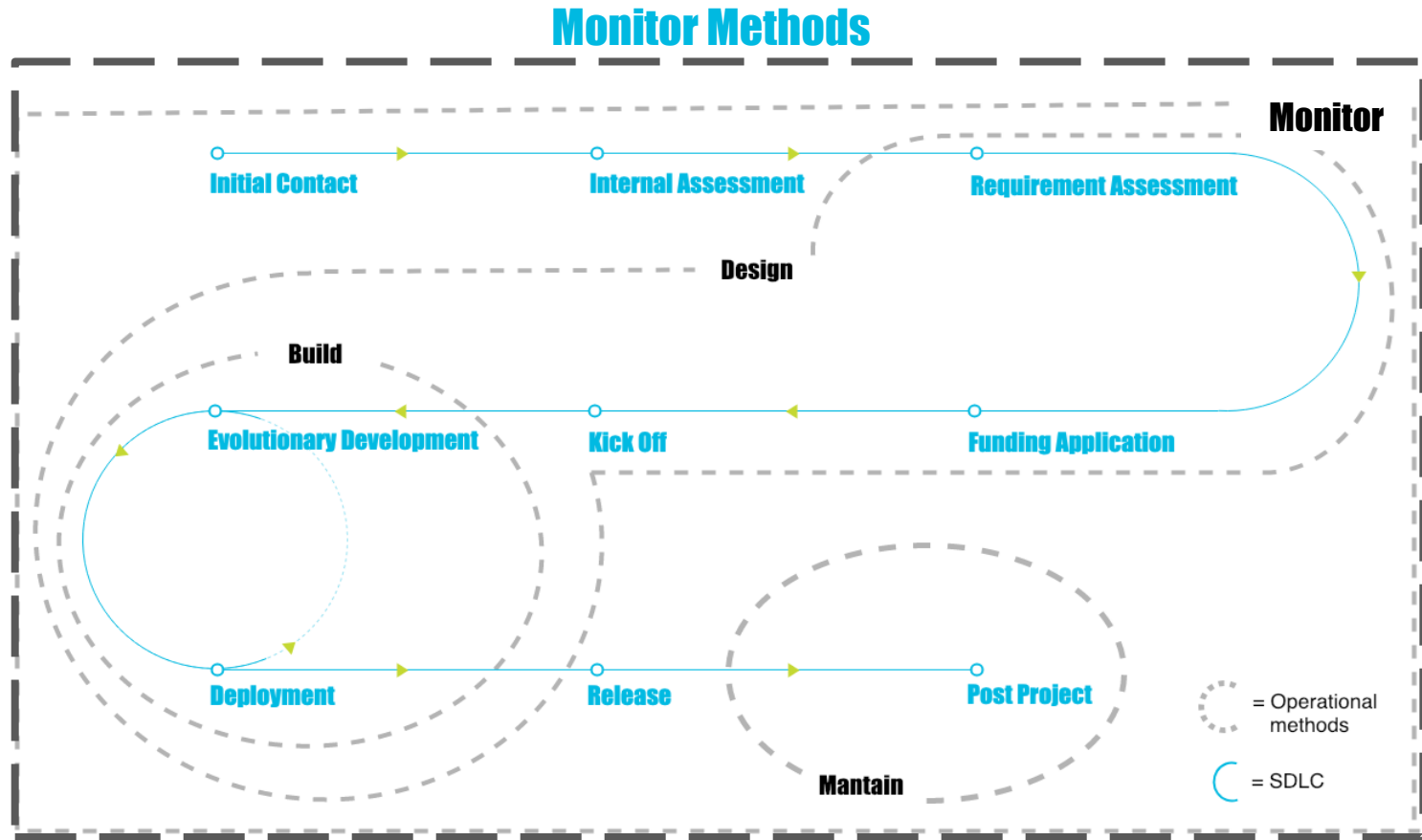
## Alignment to Agile DSDM Process



Agile Business Consortium (2014). Chapter 6: [Process](#). Image ©Agile Business Consortium Limited.



Smithies and Ciula (forthcoming).



Smithies and Ciula (forthcoming).



## Project Management & Communication Tools

Active Collab

Slack

G Suite for Education

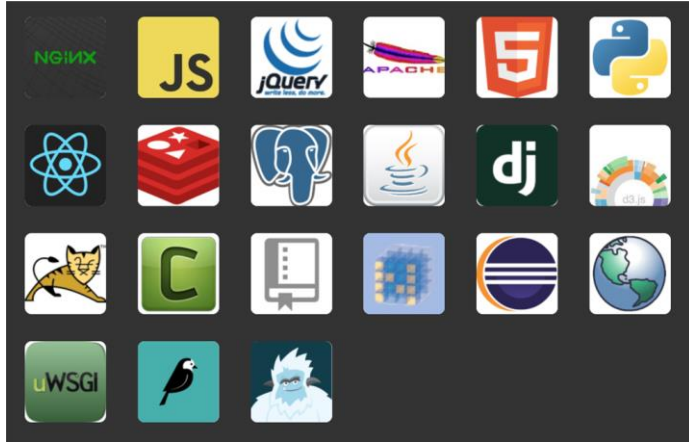
Code repositories



ActiveCollab



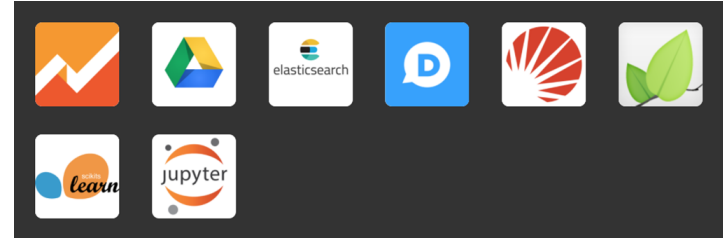
## Application and Data



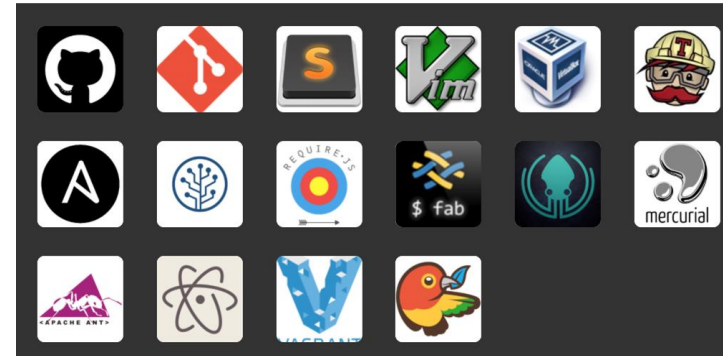
## Business Tools



## Utilities



## DevOps



See [KDL on SlackShare](#).

## Project Management & Communication

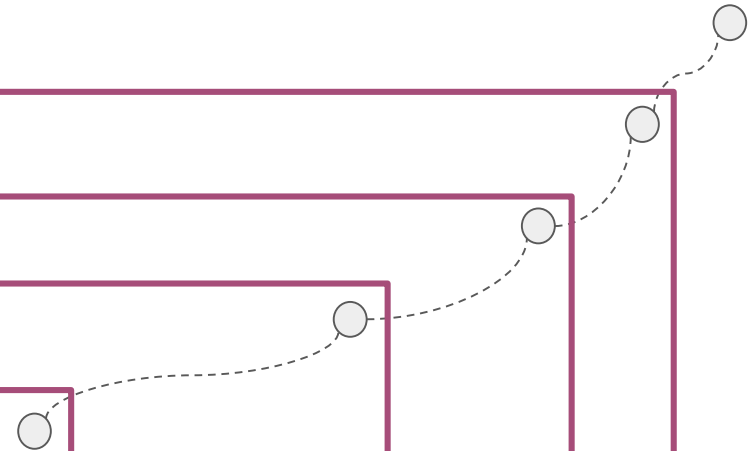
Quarterly Timebox meetings

Monthly Team meetings

Fortnightly Timebox meetings

Weekly Project Planning meetings

Daily Standup (Slack channel)



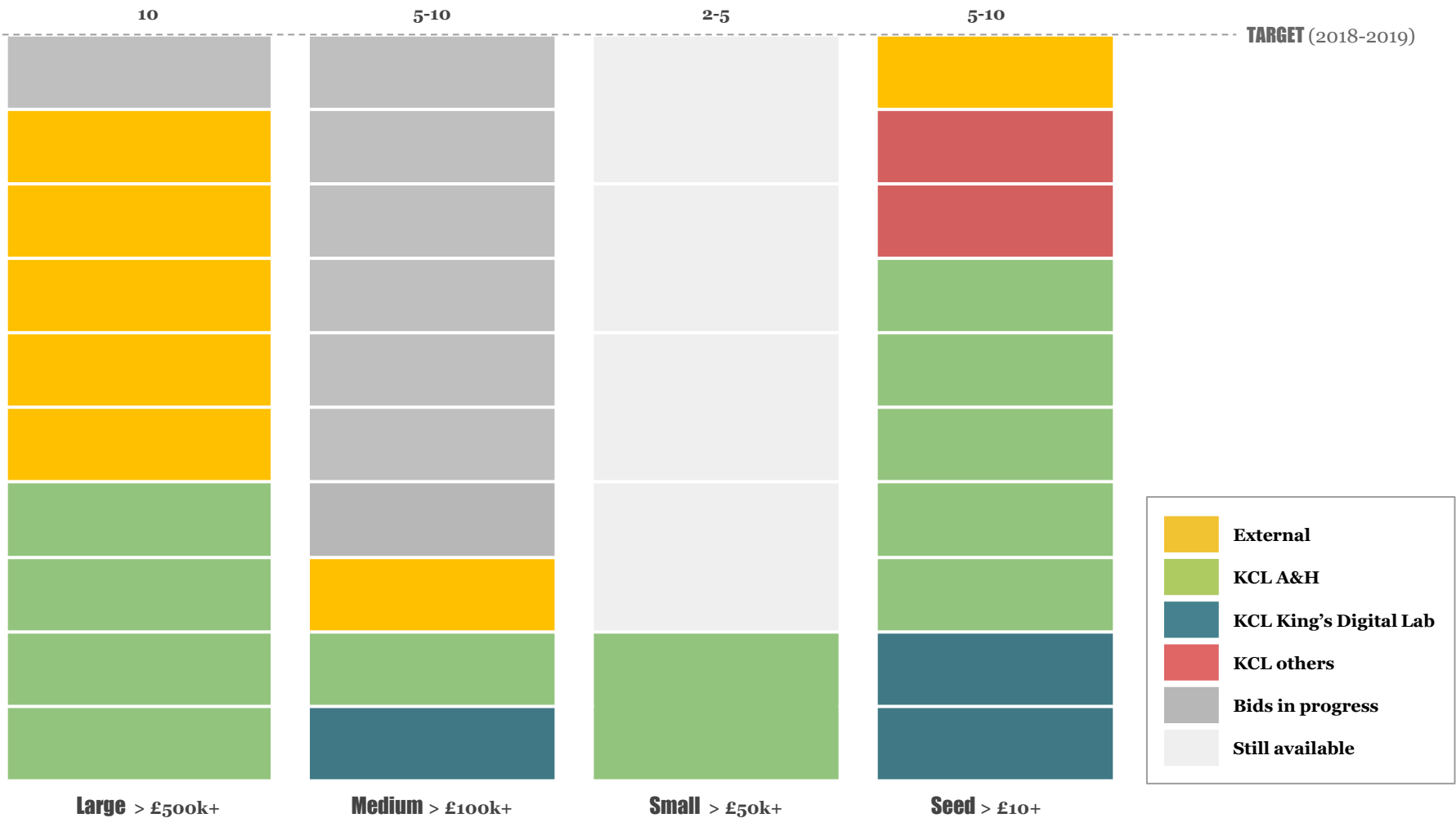
5 year strategy to increase covered costs

- 2017-18 KDL target via research bids: ca £1.5M >> target % cost recovery
- 2018-19 KDL target ca £1.4M

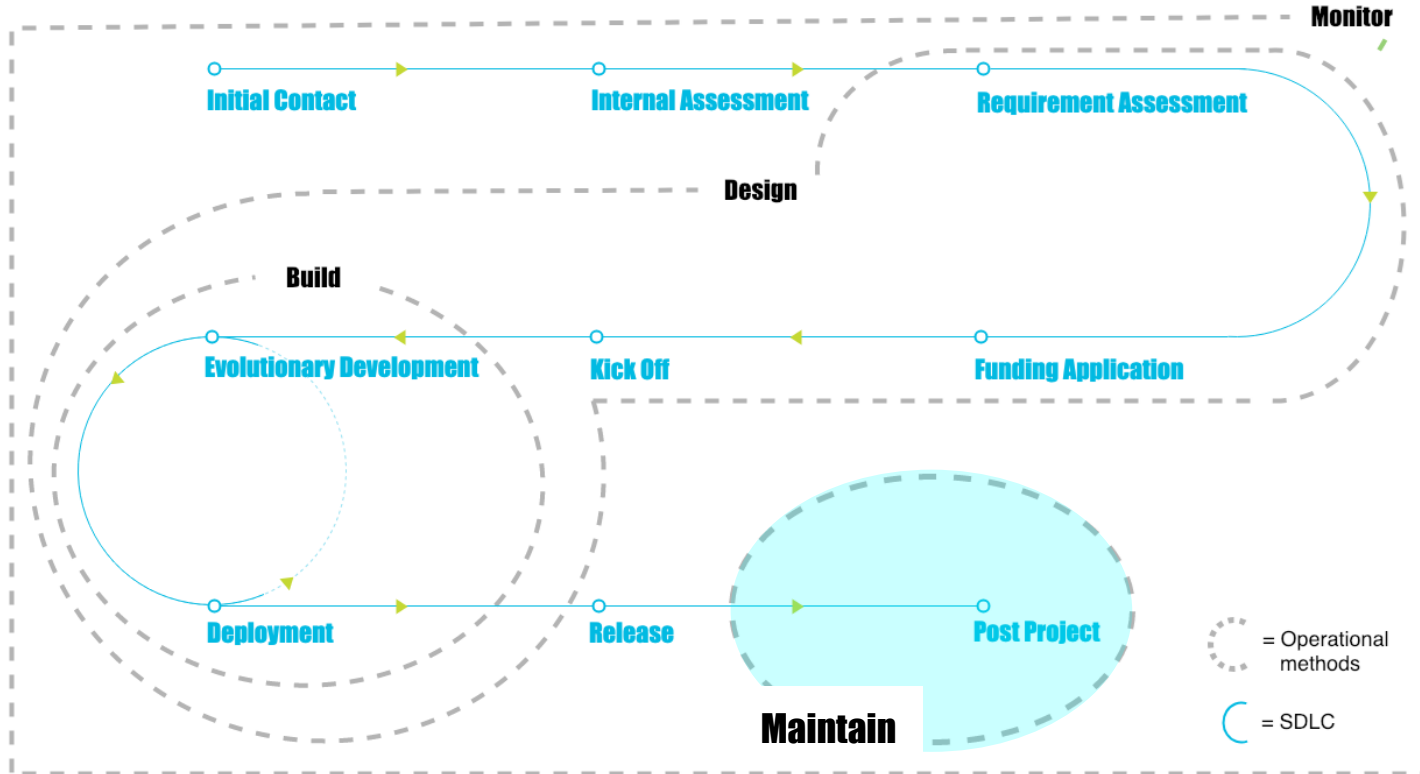
Funding spread 2018-19: ca. £20M

- 10 Large (£500k-1M)
- 5-10 Medium (£100k-£500k)
- 2-5 Small (£50k-£100k)
- 5-10 Seed / exploratory (£5k-£50k)

Diversified portfolio of funding providers



## Maintain Methods





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to explore academic  
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**Dr. Arianna Ciula**

Director / Deputy Director of King's Digital Lab

@ariciula

kdl-info@kcl.ac.uk

