



IIoT RFP Toolkit

*Creating and Managing RFPs
for the Industrial Internet*

DXWG

June 11, 2020





IIoT RFP Toolkit

Audience: Project managers and procurement manager / buyer

Assumption: IIoT vision and solution strategy already defined

Benefits: Streamlined IIoT solution process resulting in acquisition of better solutions, delivered by suppliers in time and at best cost



IIC RFP Toolkit

- ① Challenges, risks and mitigation
- ② Project planning
- ③ RFP creation
- ④ IIC RFP wizard
- ⑤ RFP distribution & vendor selection



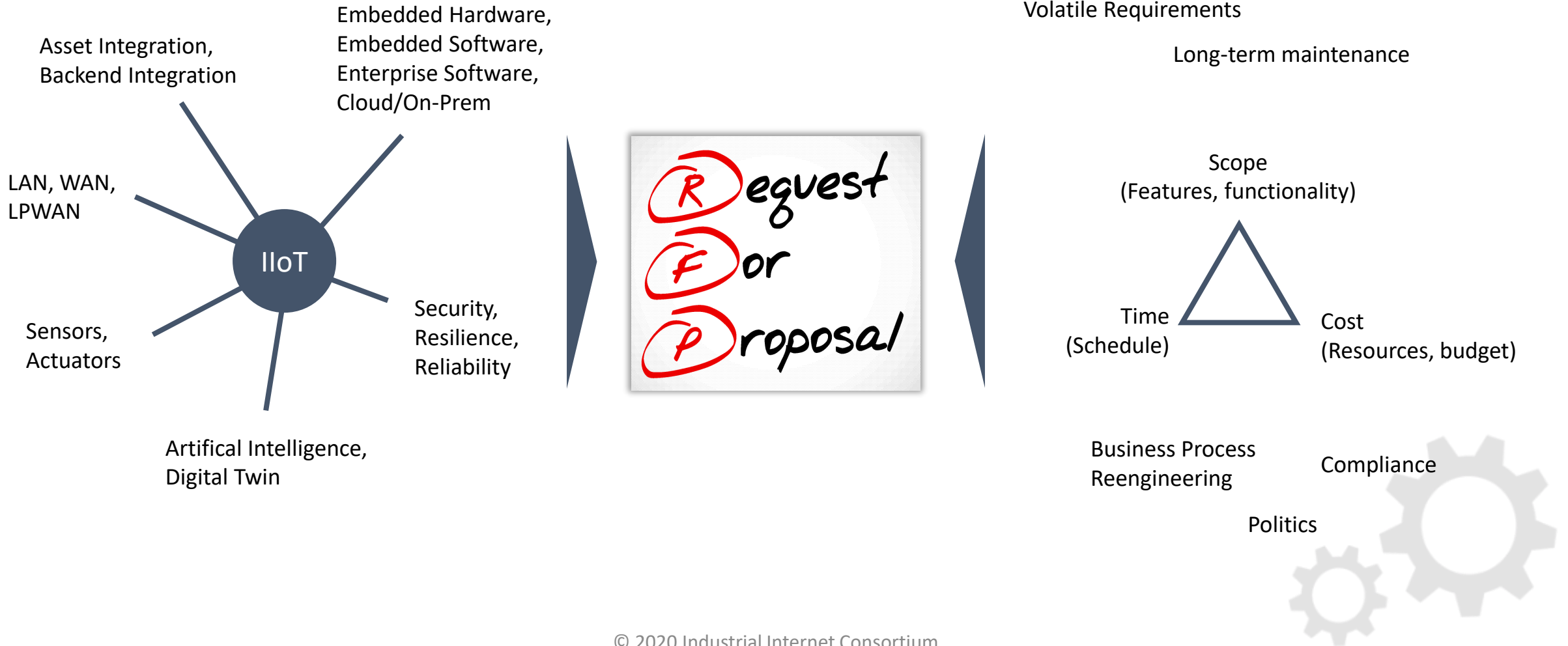


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IloT: Typical Challenges





IloT Procurement & Project Risks

- 1) Analysis paralysis
- 2) Selecting the wrong vendor
- 3) Selecting the wrong technology
- 4) Selecting bleeding edge OR end of life technology
- 5) Implementation failure
(functionality, stability, quality)
- 6) Schedule overrun
- 7) Budget overrun
- 8) Lack of user buy-in
- 9) Non-compliance
- 10) Business disruption





Mitigation

Poor Selection Process

Pre-RFP Planning

- Ad-hoc stakeholder involvement
- Poor requirements documentation
- Unstructure vendor-engagement process

RFP Document

- Borrowed / copy-paste
- Confusing for vendors
- Unclear scope
- Timelines not well managed

Vendor Evaluation

- Limited due dilligence: no real world validation / pilots
- Unclear decision process
- Weak contract negotiations

Good Selection Process

- Good stakeholder management
- Requirements derived from a clear articulation of the vision
- Structured vendor engagement process

- Well structured, concise RFP document
- Effective process for managing volatile requirements
- Structured Q&A process

- Solid due diligence process
- Clear and transparent decision management process
- Effective negotiations with win/win



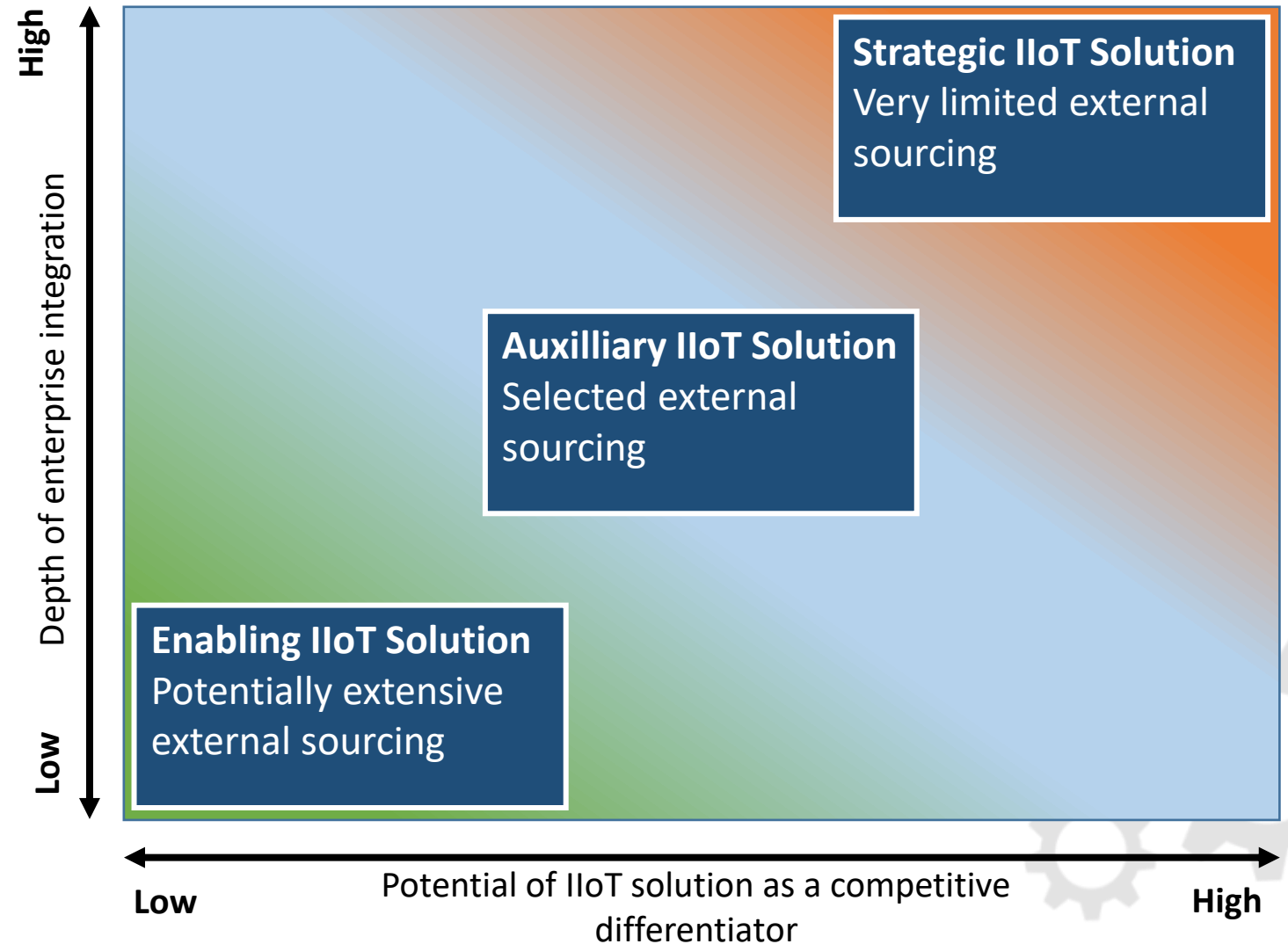
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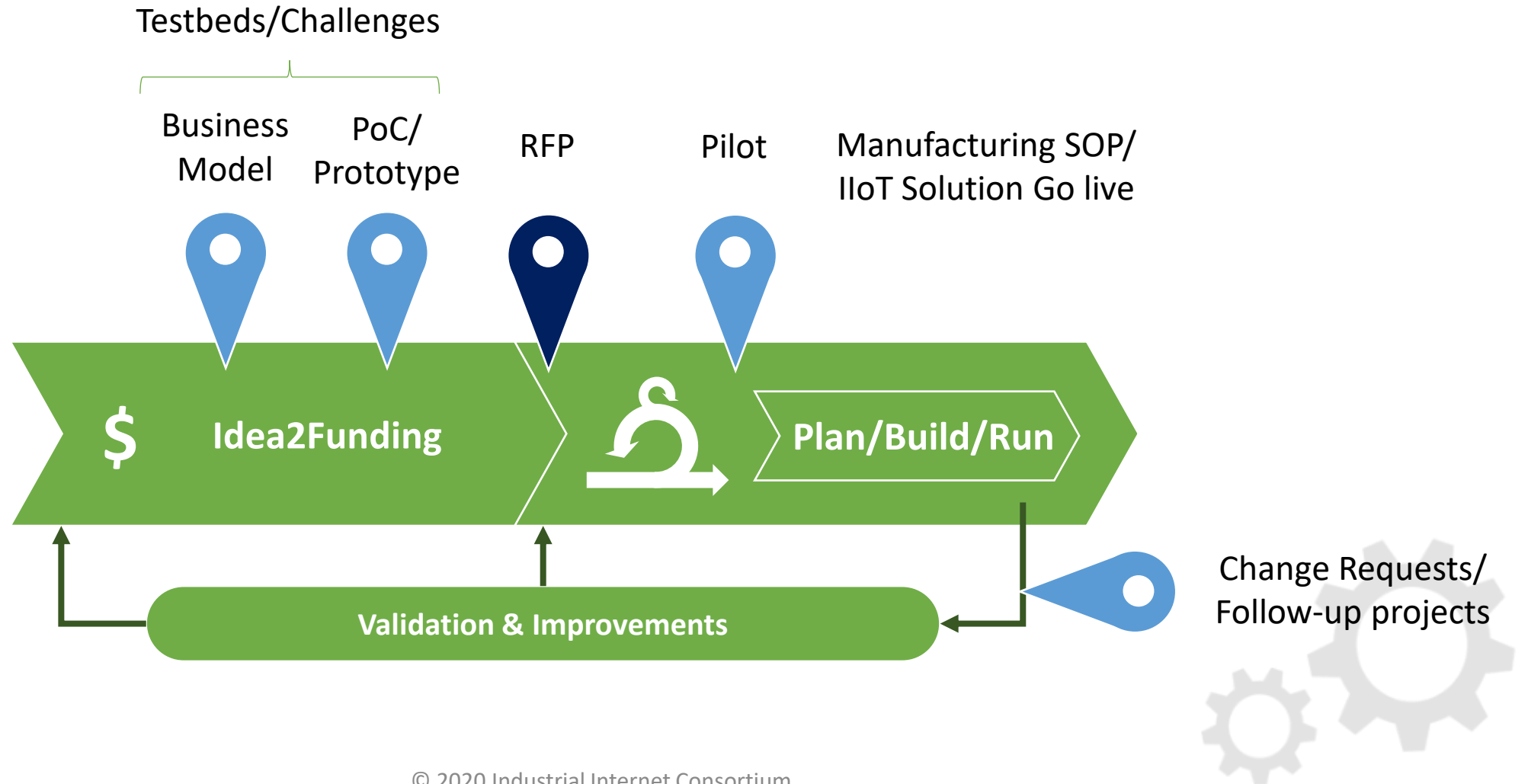
Key: Understanding the strategic positioning of the IIoT solution

- Solution will become deeply integrated into core business processes for highly relevant assets
- Important solution, but not at the heart of the enterprise
- Solution has tactical character and/or is located more on the fringes of the enterprise



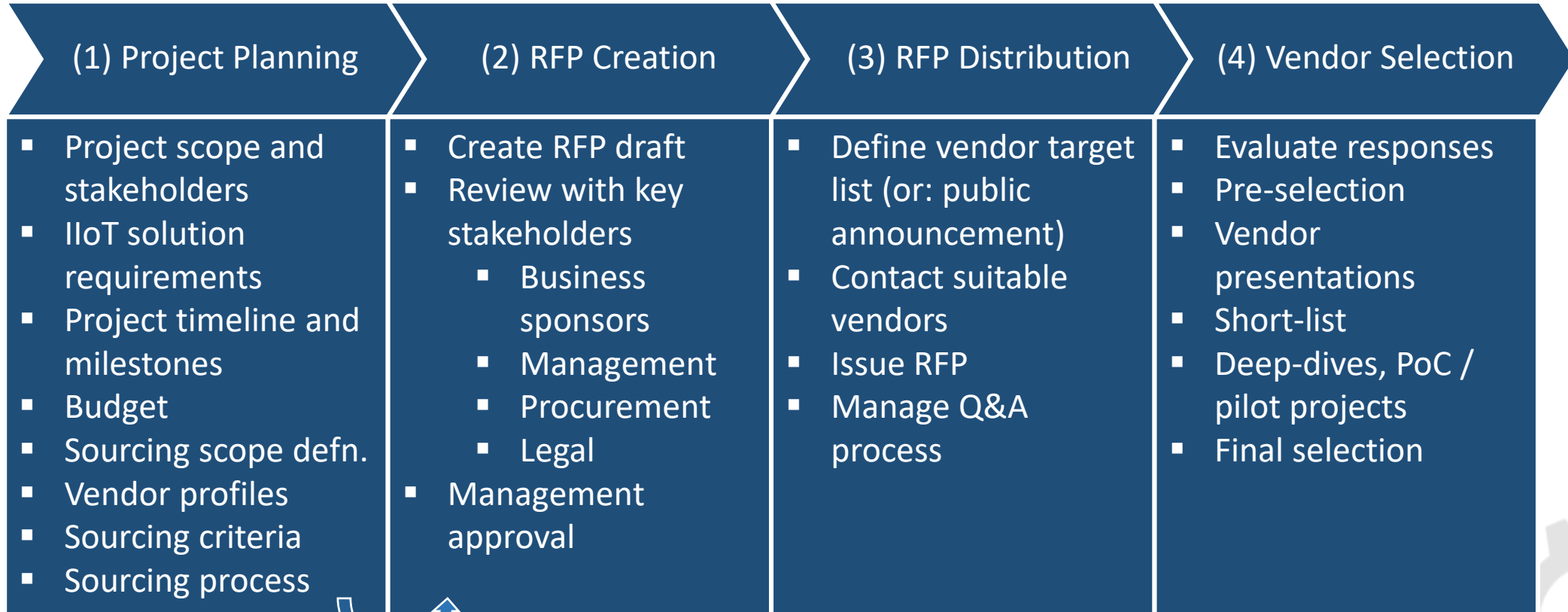


Planning: Understand how the procurement process fits into the overall IIoT project lifecycle





IloT Solution Procurement Process

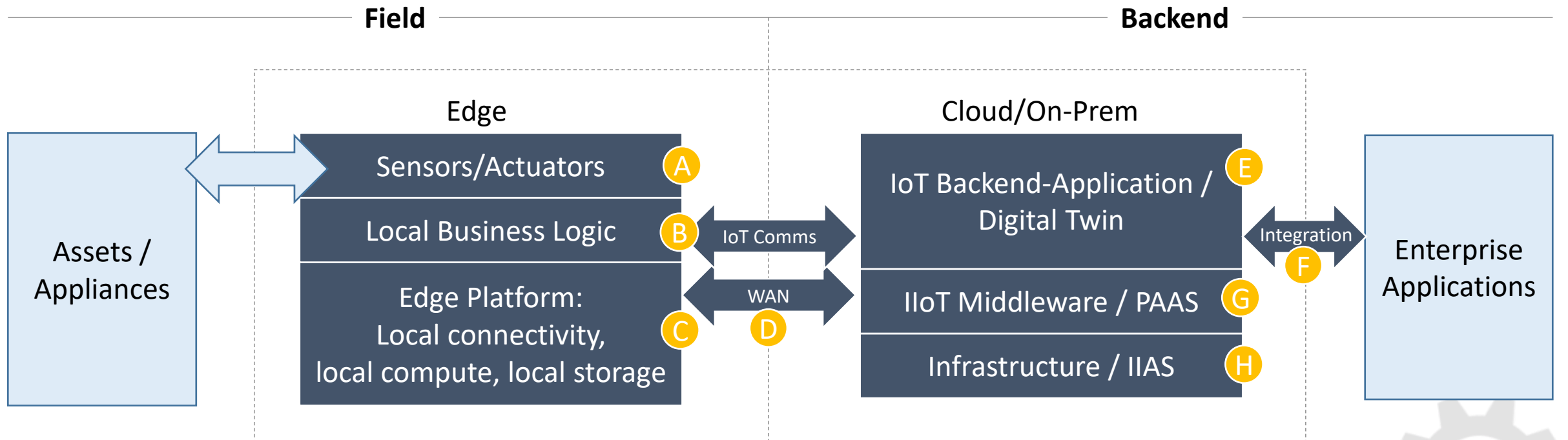


Optional: RFI (Request for Information) for vendor pre-qualification





Scope of typical IIoT Solution: What is it that we actually need to procure?





BOM vs. WBS: How does my Bill of Material look like? Or is it actually a Work Breakdown Structure?

	Hardware	Custom Software	Infrastructure
A	Sensors/Actuators	✓	
B	Field Application Logic	✓	
C	Edge Platform	✓	✓
D	WAN	(✓)	✓
E	IIoT Backend Application Logic	✓	
F	Enterprise Integration	✓	
G	IIoT Middleware / PAAS		✓
H	Infrastructure / IIAS		✓

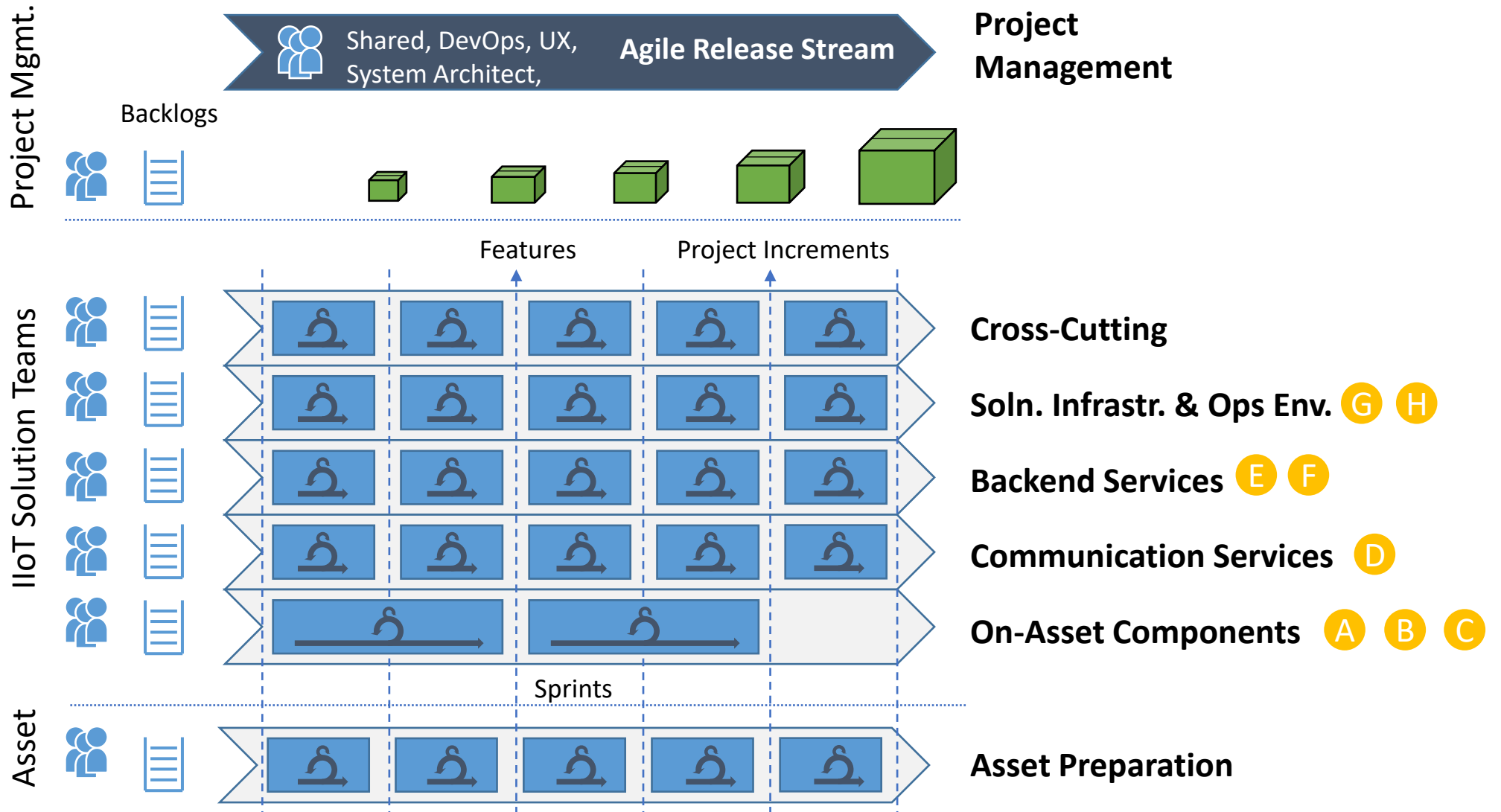
Custom or COTS
(Commercial off-the-Shelf)

Usually custom

Usually COTS



BOM/WBS vs Agile Project Setup





Agile Project Setup & Ressource Acquisition: Who is delivering what? Or: Turnkey?

Potential Sources:

- Internal
- Management Consultancy
- System Integrator (SI)
- COTS Software Vendor
- Cloud Provider
- Engineering Company
- Manufacturer

A

B

C

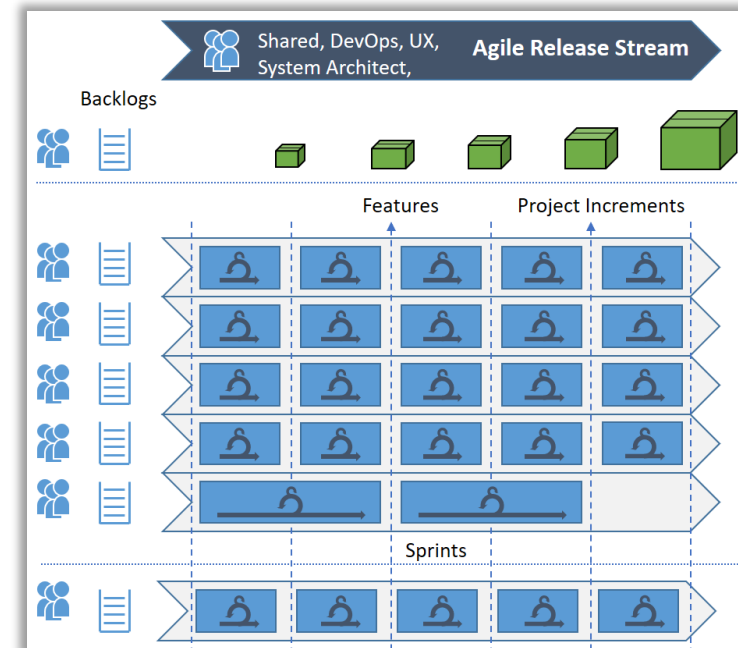
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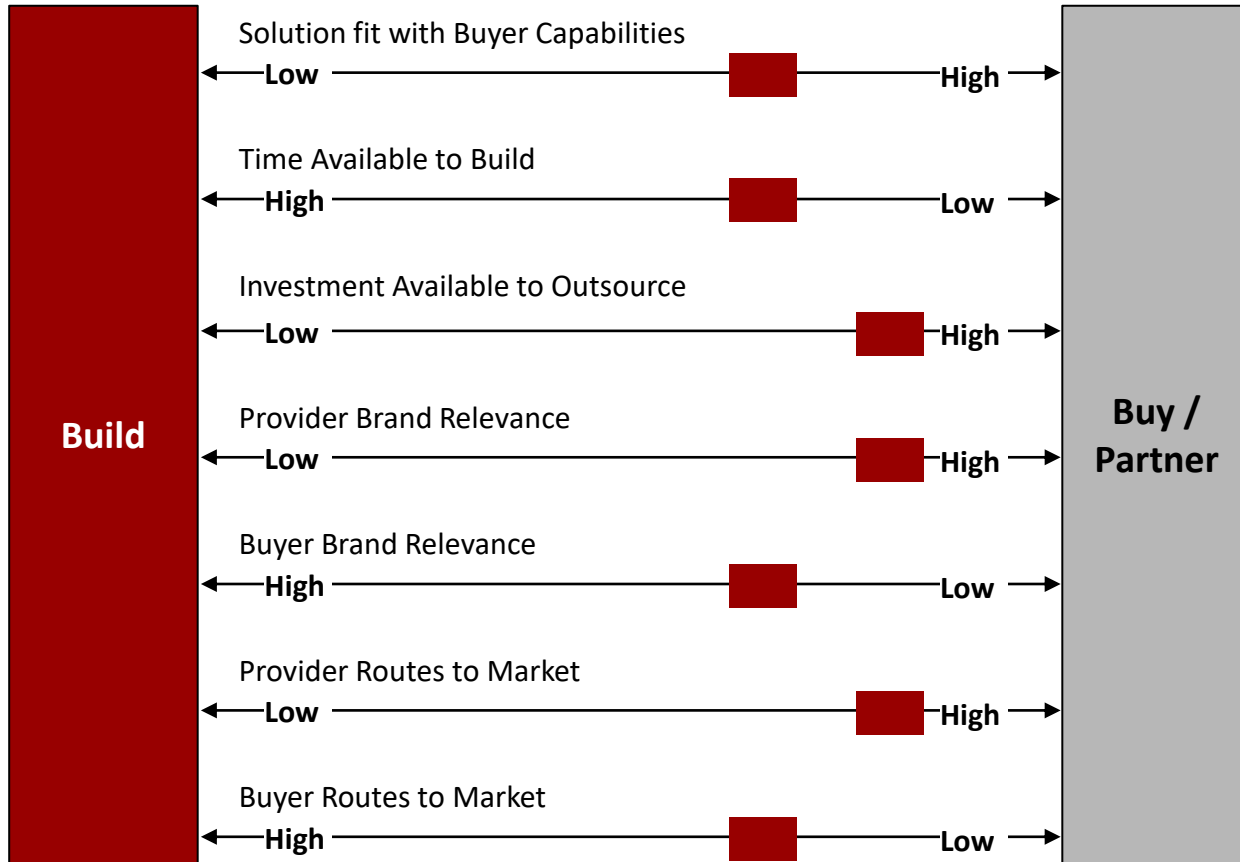
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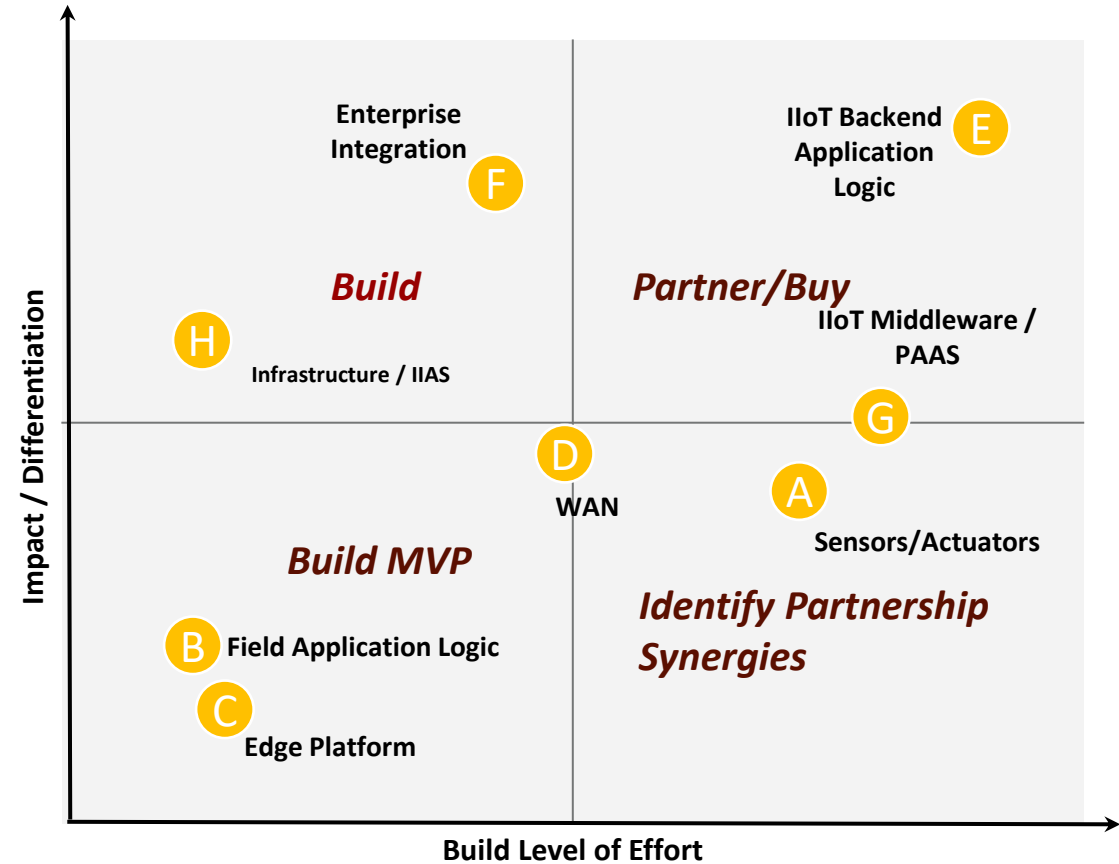


Key: Make vs Buy Decisions

Build vs Buy / Partner Rubric

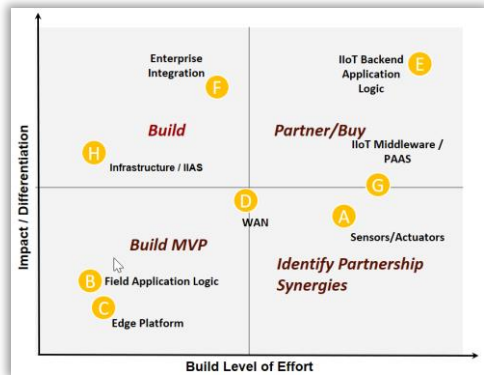


Platform Enhancement Prioritization Framework

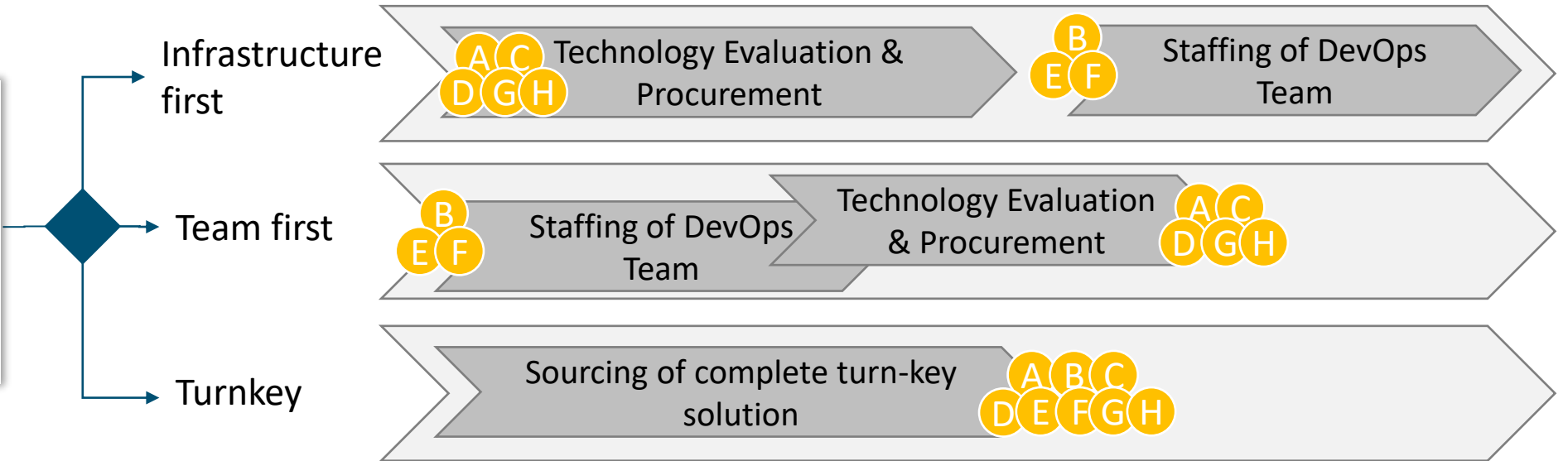




How to properly stage the procurement process?

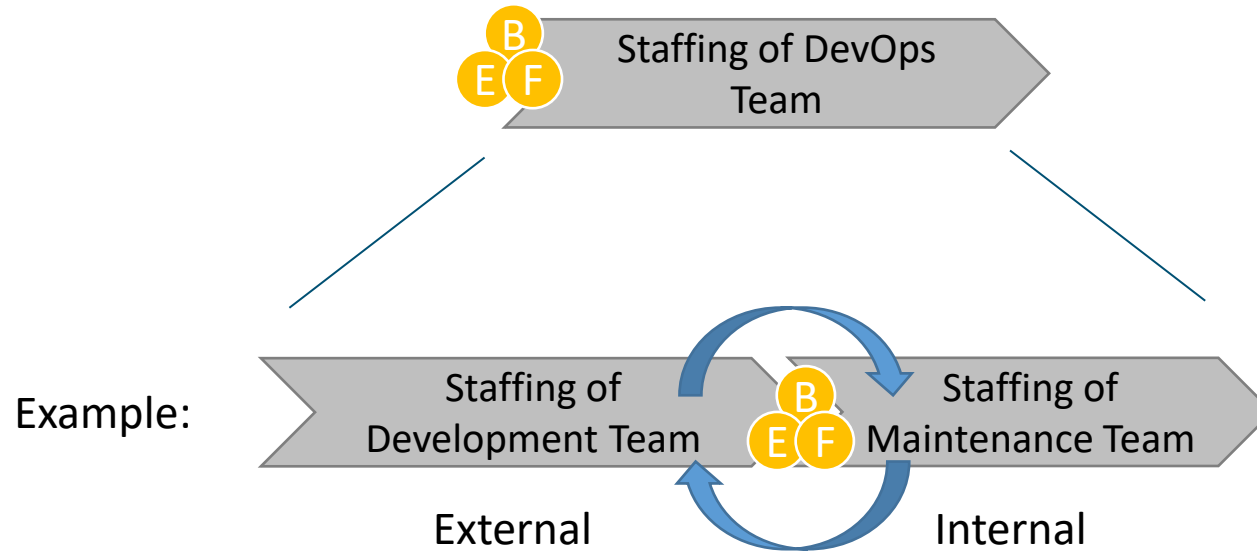


Make vs. Buy,
greenfield vs.
brownfield





How to deal with long-term maintenance?





What kind of pricing model should be used?

Contract work:
SLAs, maintenance
commitments, warranties,
etc.

Hybrid

Service contract



Fixed Price
Agile Fixed Price
Time + Material





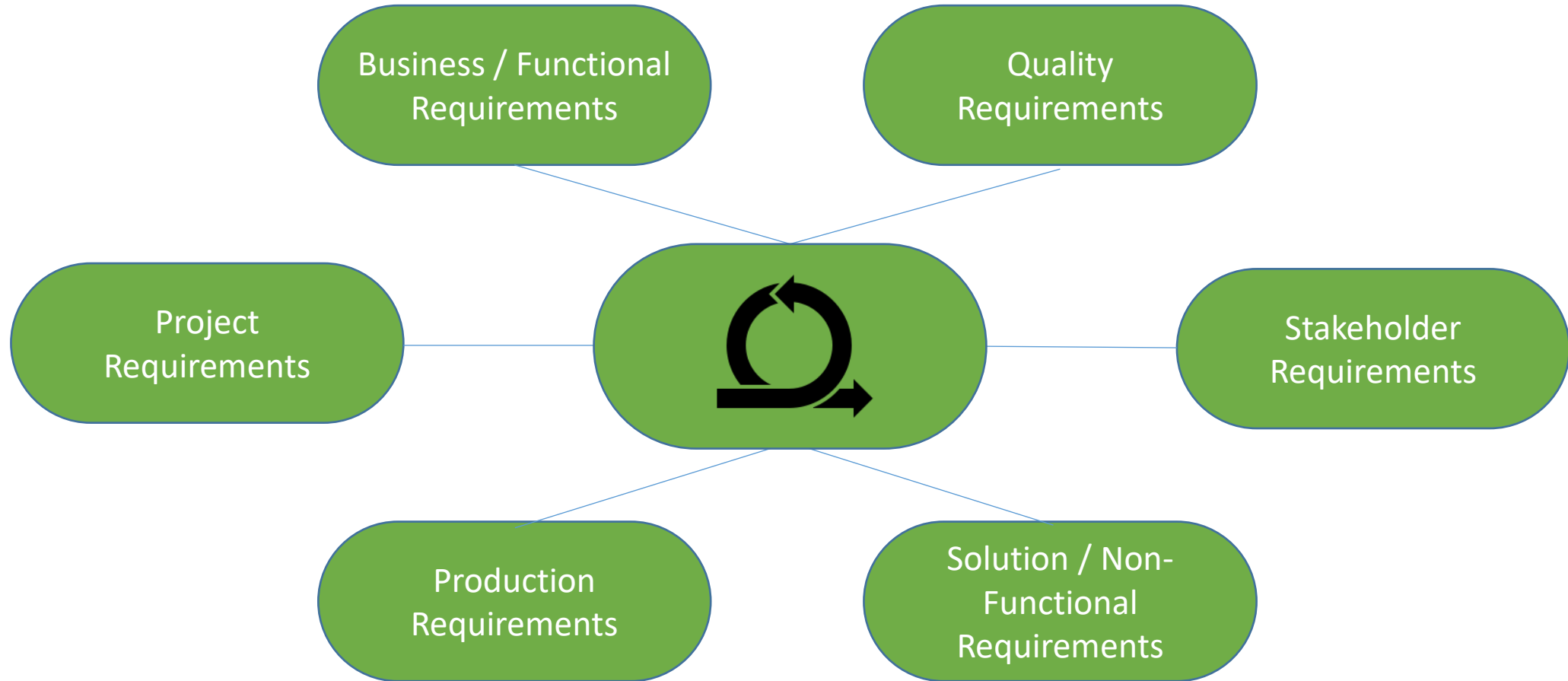
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Requirements Management





Evaluation Criteria & Evaluation Sheet

Criteria	Weighting	Min	Vendor: ACME IIoT Solutions	
			Evaluation (1-10)	Weighted
IloT Solution General	35%			2,45
Price	15%	7	7	1,05
Vendor / strategic fit	10%	5	6	0,6
Completeness of offering	10%	8	8	0,8
Non-Functional Requirements	25%			1,1
NFR 1.1	5%	6	7	0,35
NFR 1.2	10%	5	2	0,2
NFR 2.1	5%	6	6	0,3
NFR 2.2	5%	5	5	0,25
Functional Requirements	25%			1,5
FR 1.1	5%	7	8	0,4
FR 1.2	10%	6	6	0,6
FR 2.1	5%	7	7	0,35
FR 2.2	5%	6	3	0,15
IloT Solution Ops & Maintenance	15%			1,1
OM 1.1	10%	8	8	0,8
OM 1.2	5%	7	6	0,3
	100%		Score (1-10):	6

Key questions:

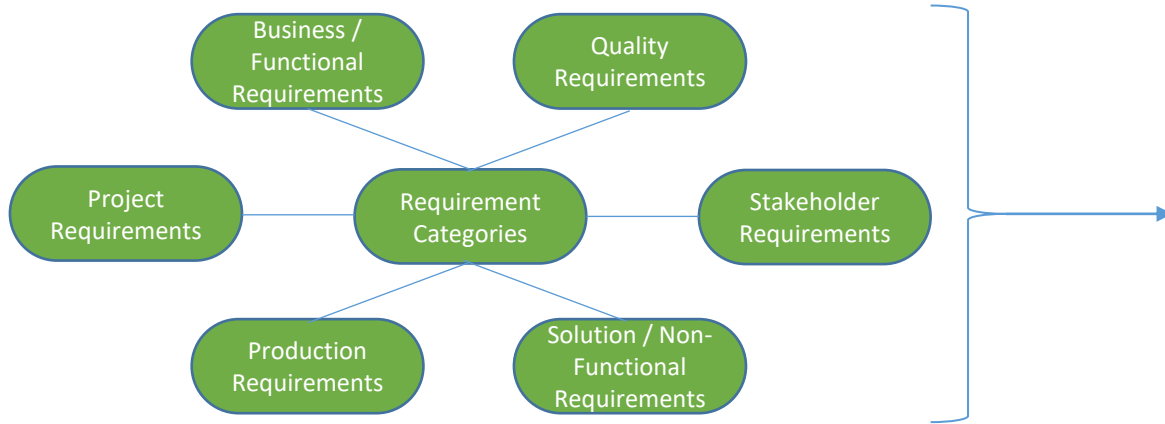
- How important is cost?
- What is the cost to FR/NFR ratio?
- What is the FR to NFR ratio?
- What about vendor evaluation, e.g. vendor size, financial stability, long-term maintenance support capabilities, etc.

Source: Ignite 1.3





From requirements to the RFP document



Company	Project Name	Proposal Due Date
Project Overview		
Project Goals		
Scope of Work <ul style="list-style-type: none">Functional RequirementsNon-Functional RequirementsQuality Criteria		
Submission Requirements		
Evaluation Metrics and Criteria		
Submission Process, Timeline, Budget		
Contact Details		





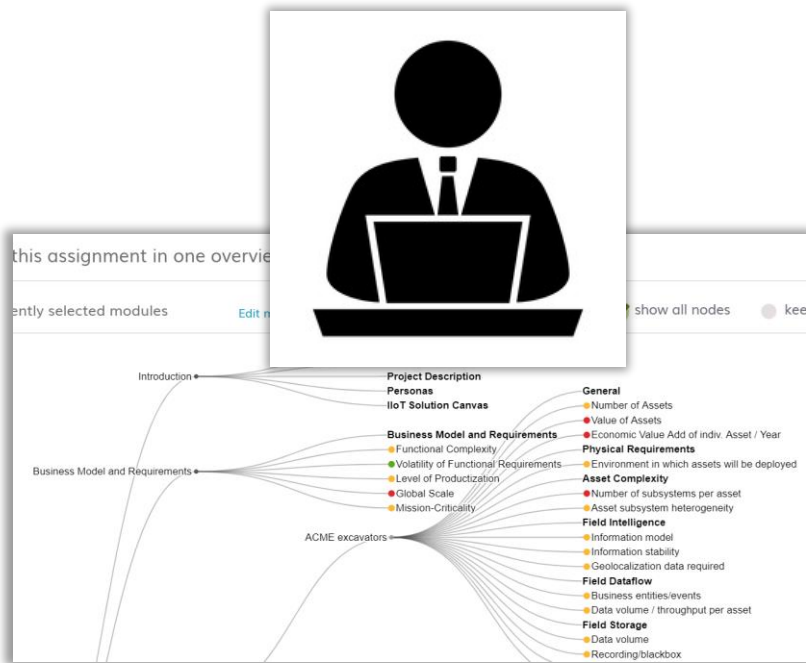
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Using IIC's RFP Wizard to create initial RFP draft

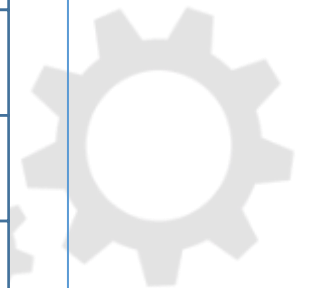


Use IIC's RFP Online Tool to:

- Take online 360° survey of IIoT project
- Create foundation for functional and non-functional requirements
- Export as Word document for further refinement

Company	Project Name	Proposal Due Date
Project Overview		
Project Goals		
Scope of Work <ul style="list-style-type: none"> ▪ Functional Requirements ▪ Non-Functional Requirements ▪ Quality Criteria 		
Submission Requirements		
Evaluation Metrics and Criteria		
Submission Process, Timeline, Budget		
Contact Details		

Export as Word File



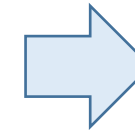
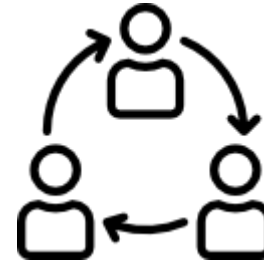
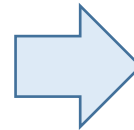
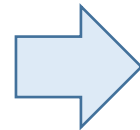
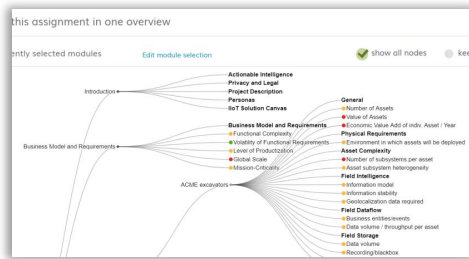


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Completing and Issuing the RFP



- Create initial RFP document using the IIC RFP Online Tool

- Refine RFP document by filling out missing sections
- Apply internal standards, e.g. DOD DID/CDRL

- Review with key stakeholders
 - Business sponsors
 - Management
 - Procurement
 - Legal
- Management approval

- Define vendor target list (or: public announcement)
- Contact suitable vendors
- Issue RFP





RFP Process and Evaluation

Q&A Process

- Typically, during the RFP processing phase, potential suppliers come back with questions
- A standard process should be applied for how to deal with this, e.g. by giving each contender a change to discuss questions in a phone call
- After having reviewed all questions from all contenders, a written update to the RFP can be submitted to all contenders, clarifying potentially difficult to understand areas / missing information
- Benefit for RFP issuer: increased quality and uniformity of offers received

Reference Checks

- If legally allowed, reference checks can be an important source of information
- Typical questions include other customers' experience with the vendor and its products
- Key: ensure that outcomes of reference checks are integrated into overall evaluation score matrix

PoC / Pilot Projects

- Especially for strategic solutions, it can be a good idea to invite shortlisted vendors to participate in proof-of-concepts or pilot project implementations
- Especially if technology is new and not yet proven, as can be the case with leading-edge IIoT technology
- Key questions: Who is funding this? Is this part of the RFP process, or does it come afterwards?



RFP Process and Evaluation

Evaluation Committee

- Proper setup of the evaluation committee is essential, including key stakeholders: business and technology experts, but also procurement and legal
- Ensure evaluation committee members have sufficient time, since this can be an intense process
- Evaluation-related meetings: preparation/training, vendor Q&A sessions, evaluation session, etc.

Evaluation

- Consider independent reviews of cost proposals
- Use clear formula to determine cost scores
- Cost proposals must be taken at face value
- Functional / non-functional requirements must be evaluated strictly by the agreed criteria
- Only the criteria in the common evaluation form can receive scores

Evaluation Process

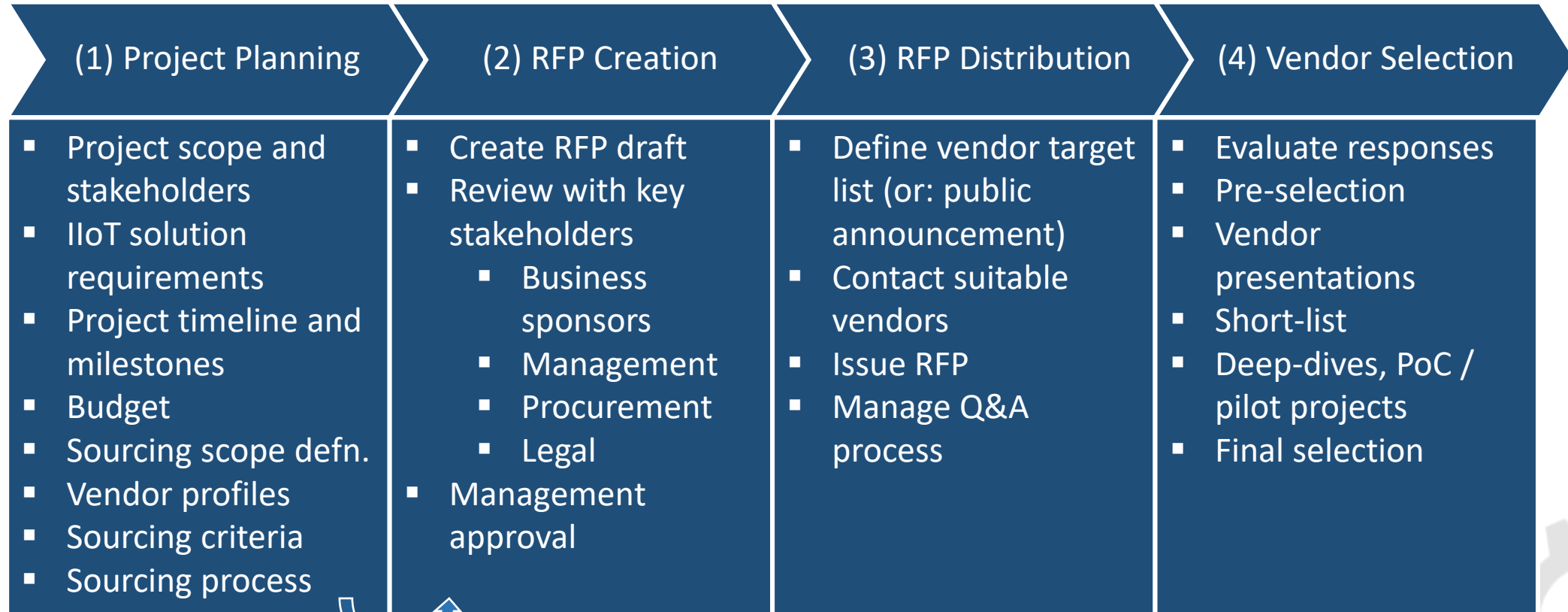
- Evaluation committee members typically review final proposals independently
- Functional, non-functional and cost scores are assigned individually and then compared to reach consensus
- Written recommendation to management, management presentations, management approval

Communication of Results

- Depending on internal processes, established procedures have to be followed
- Vendors usually appreciate direct feedback, e.g. making the final evaluations available to them
- This can help vendors improve their offerings
- However, it can also lead to unwanted discussions / attempts to re-submit offers



Summary



Optional: RFI (Request for Information) for vendor pre-qualification



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