Il Project Management per l'innovazione

Simone Berti
GE Oil & Gas

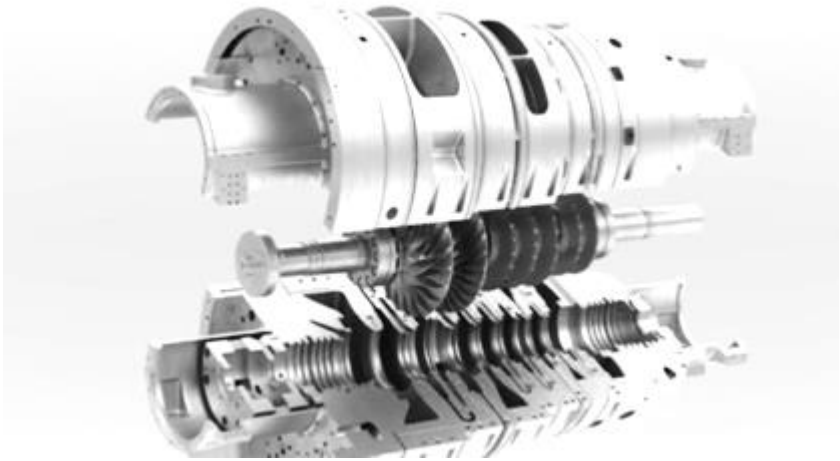
Evento PROBEST/ANIMP/IPMA
Cinisello Balsamo | 28 sett 2016



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Agenda

1. Innovazione e progetti di Ricerca e Sviluppo (R&S)
2. Caratteristiche del Project Management per l'innovazione
3. Le competenze del Project Manager per R&S
4. Un progetto di R&S in GE Oil & Gas
5. Conclusioni



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Introduzione



Simone Berti

GE Oil & Gas – Turbomachinery
R&D Portfolio Manager

IPMA

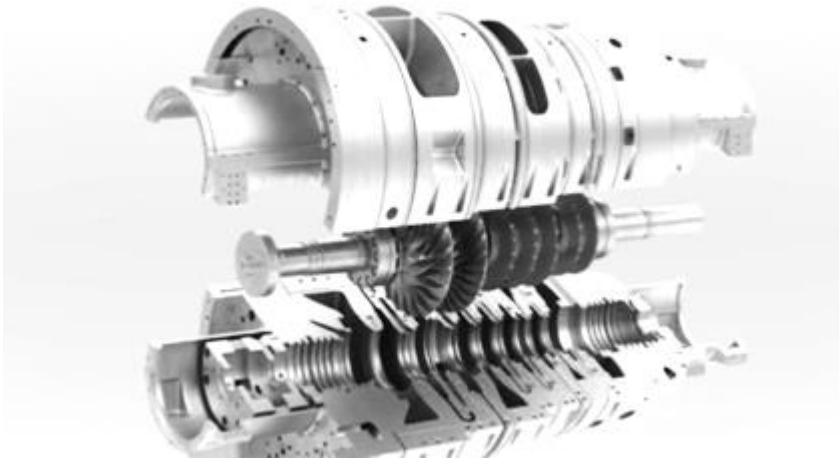
Certified Projects Director
Level A

Process/Design Engineering	**5 yrs**
Project Engineering	**6 yrs**
Project/Portfolio Management	**6 yrs**

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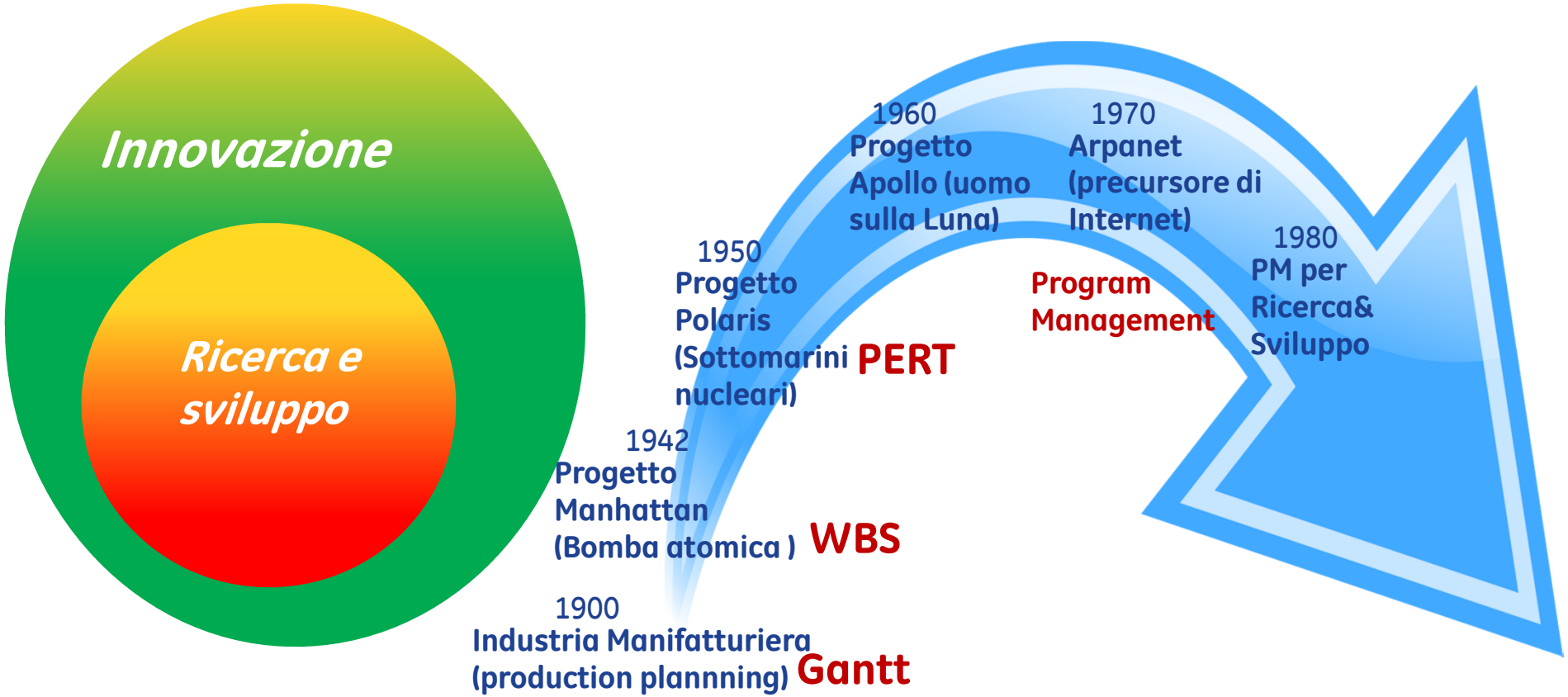


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Innovazione vs. Ricerca & Sviluppo

Cosa è l'innovazione?

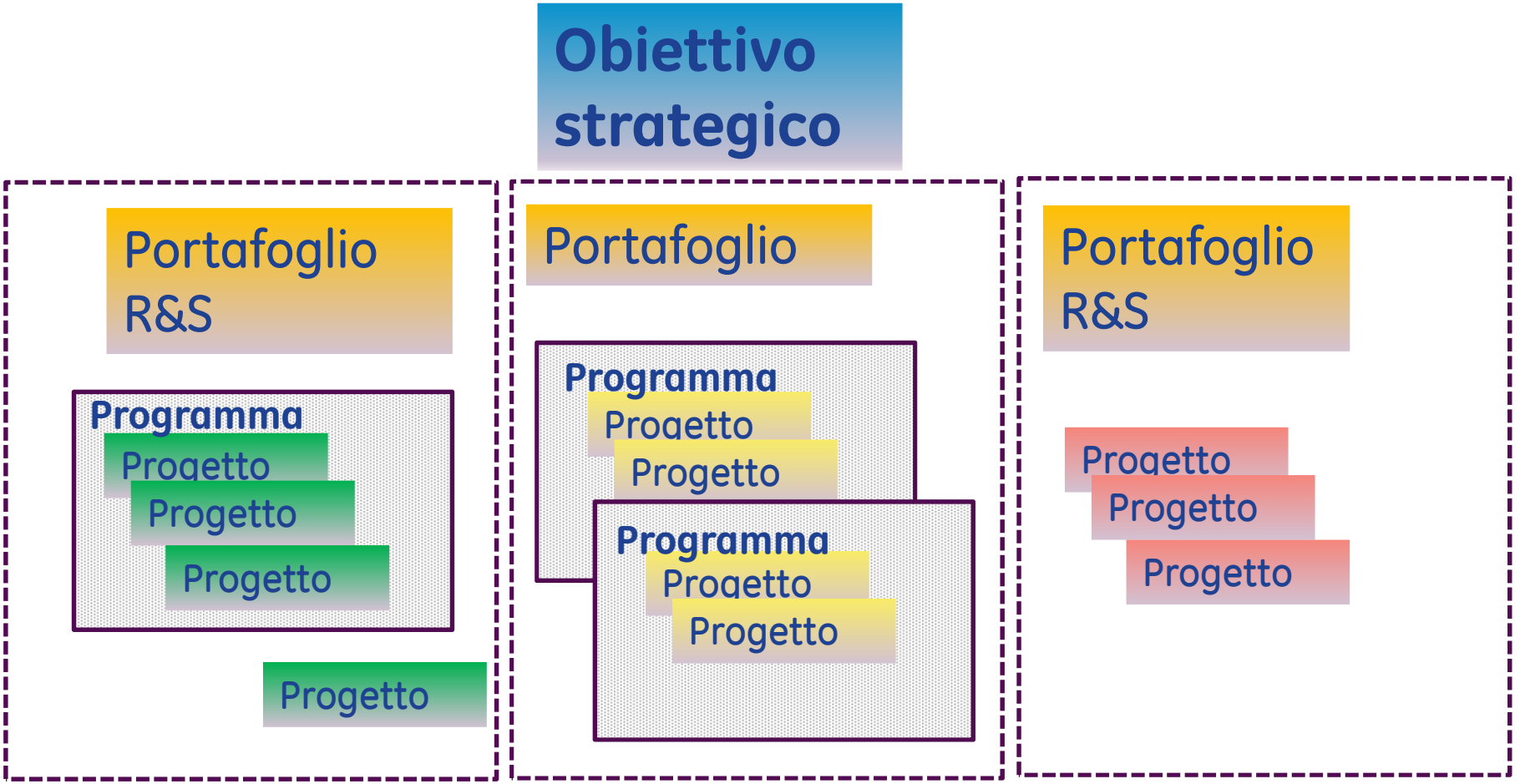


Il Project Management si è evoluto con l'innovazione

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I progetti R&S ed il Portafoglio



Il Portafoglio R&S è funzionale alla strategia aziendale

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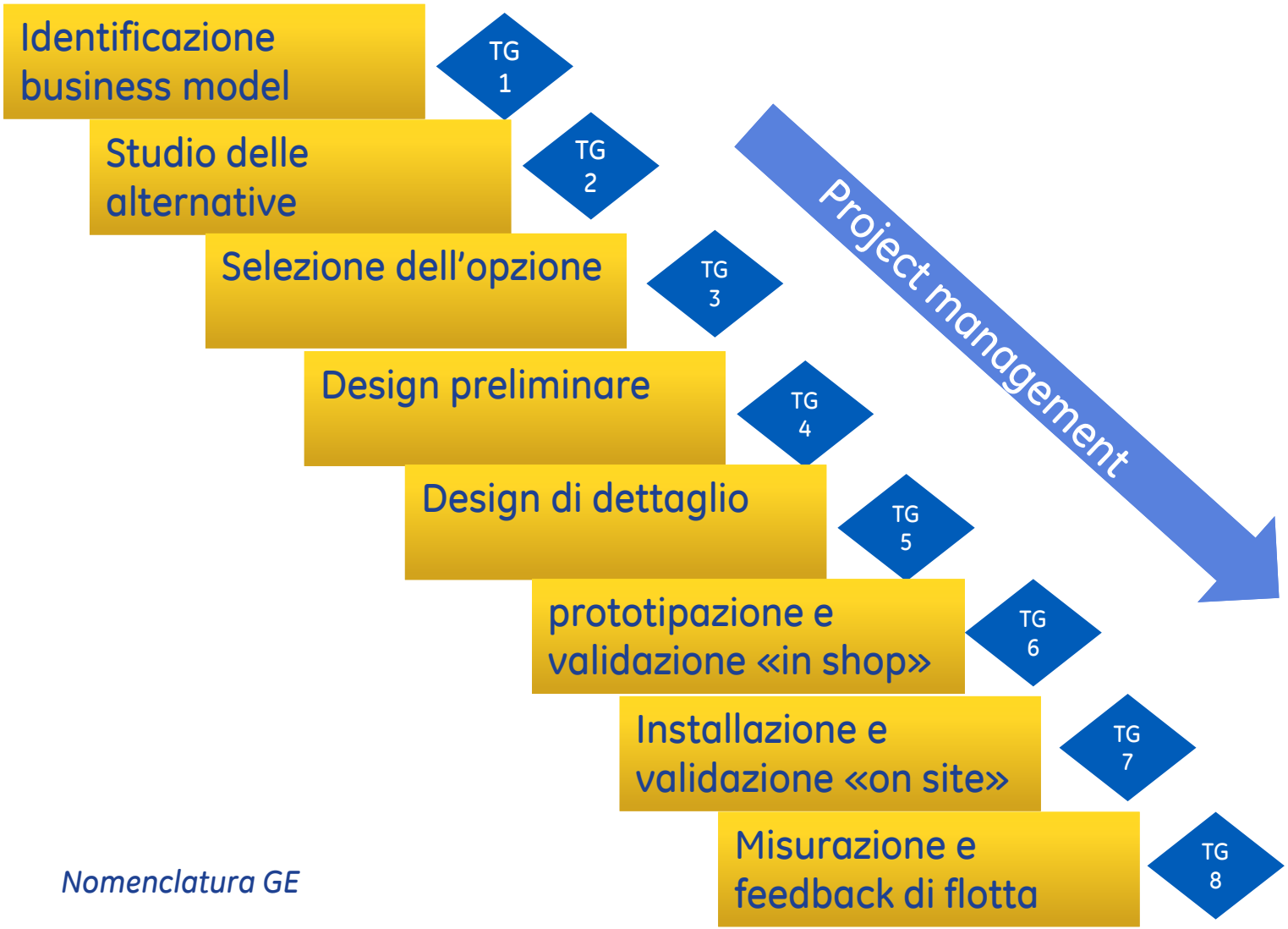
I progetti R&S ed il Portafoglio



La categorizzazione dei Progetti supporta il Project Management

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I Progetti R&S: Processo



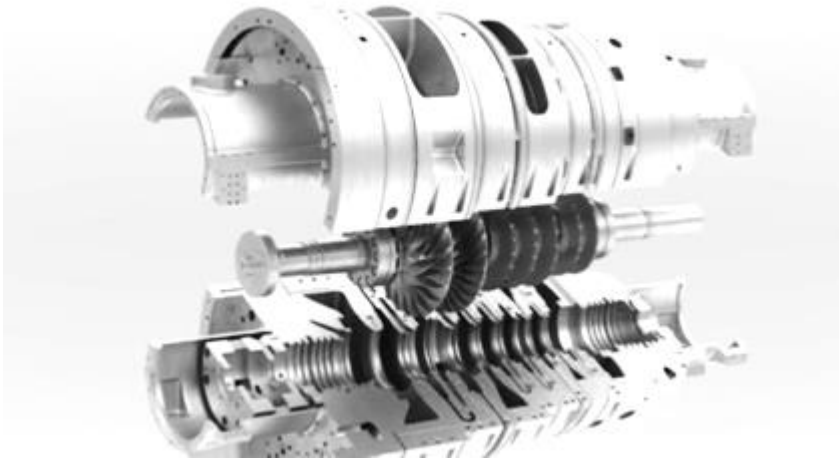
Nomenclatura GE

La Ricerca e Sviluppo richiede un processo

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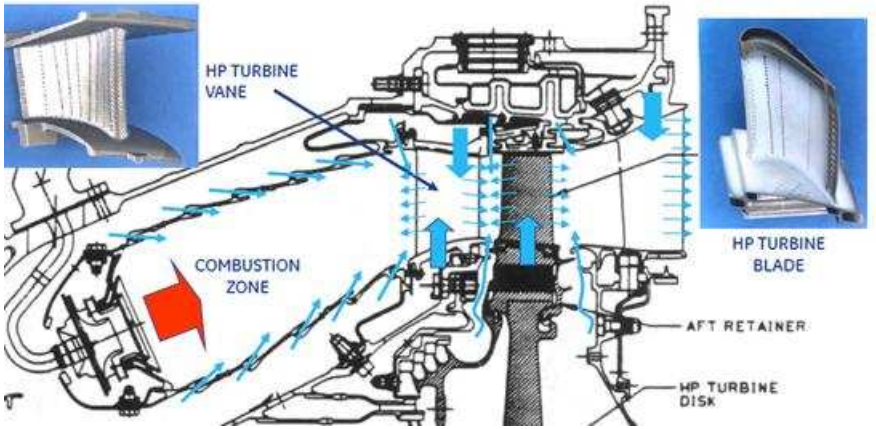
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Il Project Management per R&S : sfide

L' 'Iron triangle' del Project Management

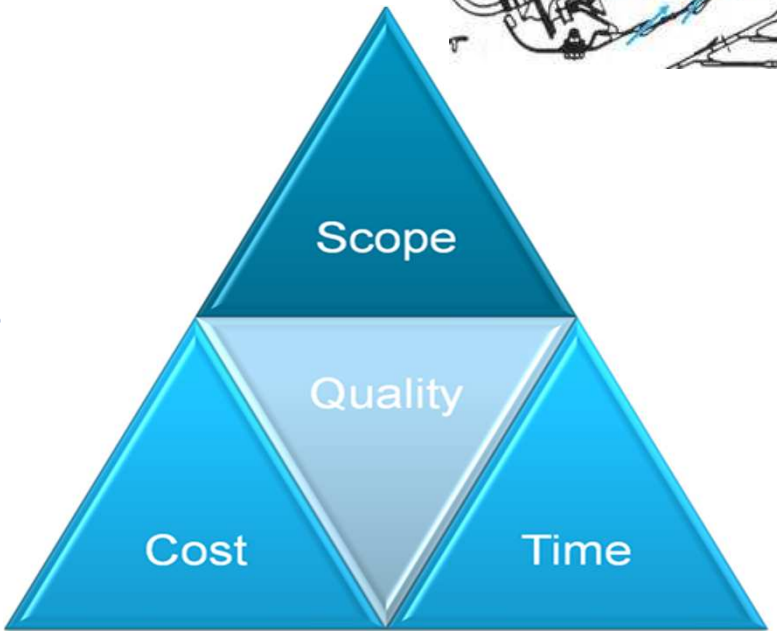


iterazioni



strategie







market

L'incertezza sullo scopo è il driver di un progetto R&S

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Il Project Management per R&S : sfide

Integration Management

Scope Management

Communication Management

Risk Management

Quality Management

Time Management

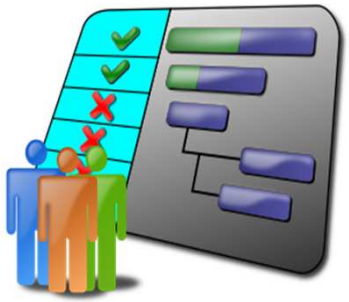
Human resources Management

Procurement Management

Stakeholders Management

Cost Management

- Incertezza in input (requisiti) ed in output (risultati)
- Cambiamenti frequenti dovuti alla sperimentazione



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Il Project Management per R&S : sfide

Integration Management

Scope Management

Communication Management

Risk Management

Quality Management

Time Management

Human resources Management

Procurement Management

Stakeholders Management

Cost Management

- Complessa comunicazione di risultati degli esperimenti



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Il Project Management per R&S : sfide

Integration Management

Scope Management

Communication Management

Quality Management

Time Management

Human resources Management

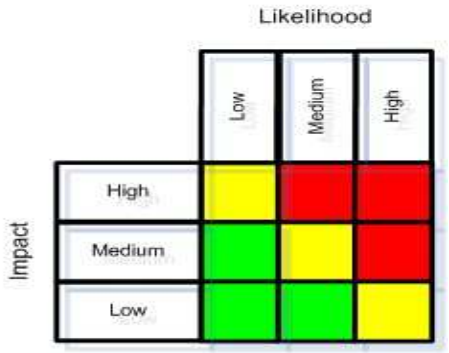
Procurement Management

Stakeholders Management

Cost Management

Risk Management

- I rischi sono inerenti a R&S
- I rischi vanno gestiti dinamicamente

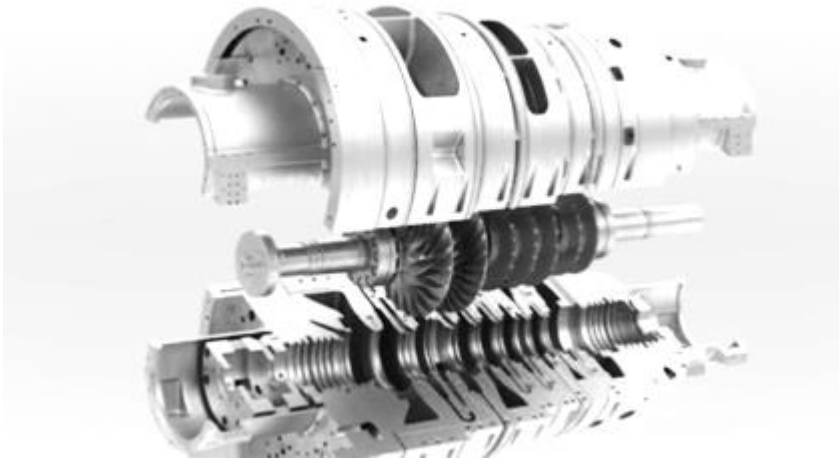


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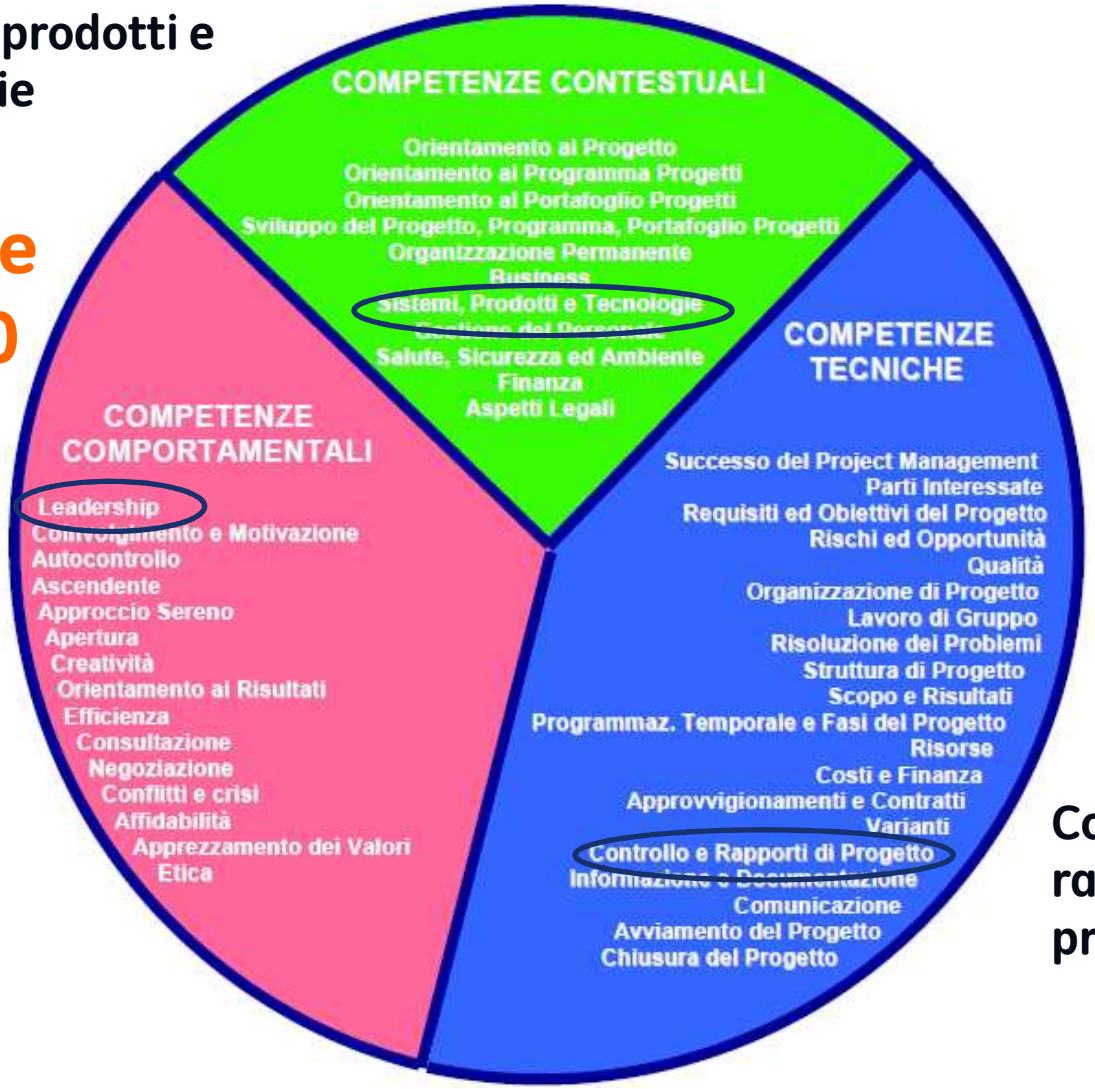
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Il Project Manager per R&S : competenze

Sistemi , prodotti e tecnologie

Ipma Competence Baseline 3.0

Leadership



Controlli e rapporti di progetto

ICB contiene le caratteristiche del Project Manager R&S

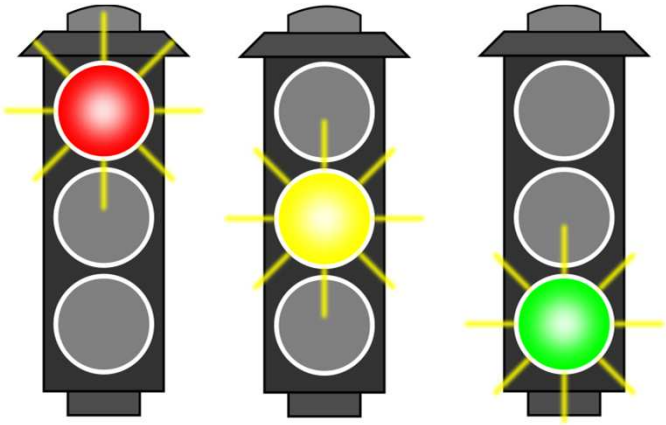
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Il Project Manager per R&S : competenze

ICB 1.16
Controllo e reporting

- La baseline, riferimento per il controllo, è più **soggetta a variazioni** che in altre tipologie di progetti

- Il project manager deve identificare indicatori meno usuali **(creativi)** per l'avanzamento progetto



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Il Project Manager per R&S : competenze

ICB 2.01
Leadership

- I progetti son direttamente collegati alla **strategia** aziendale e il top management è il principale stakeholder

- L'incertezza (dei risultati) e la non linearità (di esecuzione) richiedono di indicare al team la **direzione**



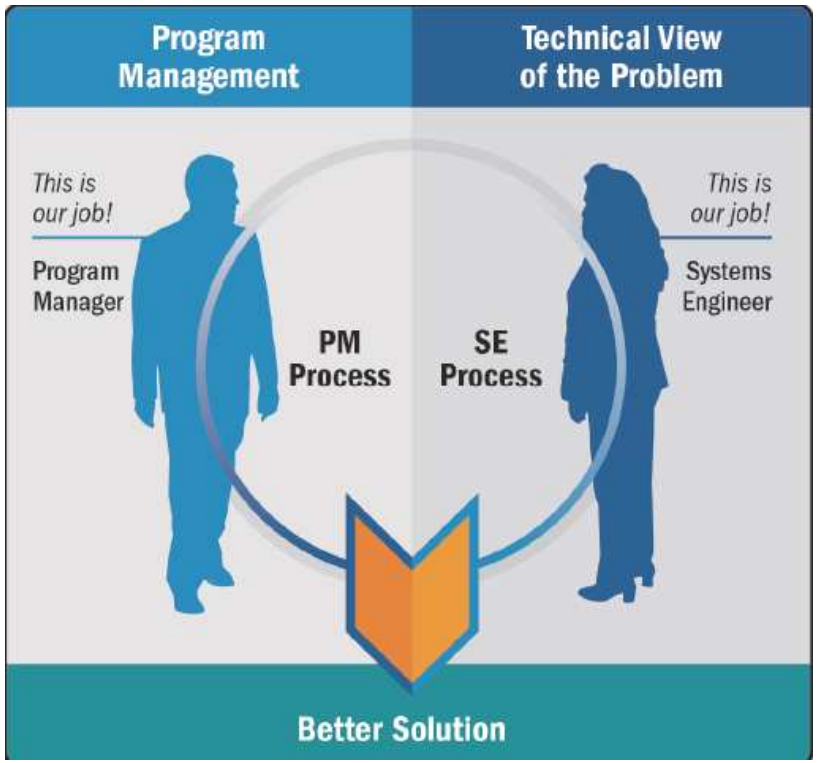
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Il Project Manager per R&S : competenze

ICB 3.07
Sistemi prodotti e tecnologie

- La conoscenza del prodotto e delle discipline di system ed industrial engineering aumenta la probabilità di successo

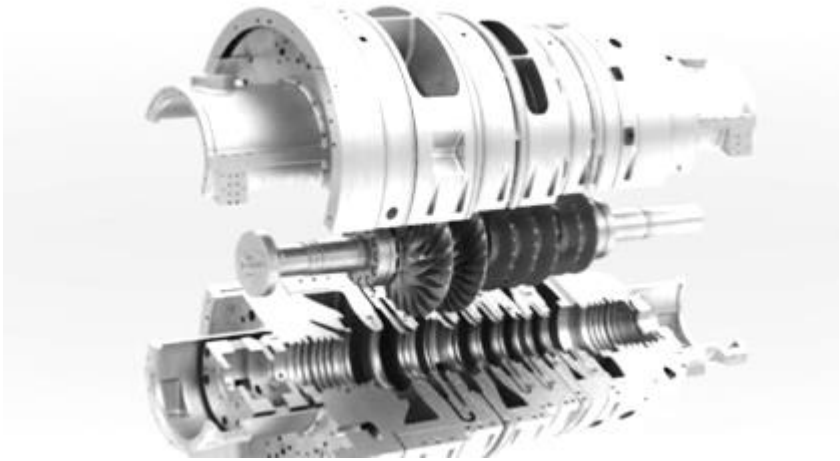
- Il project manager deve saper riconoscere i problemi tecnici (rischio di over/under design)



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Un progetto R&S in GE Oil & Gas

Compressore "Power density"

Categoria

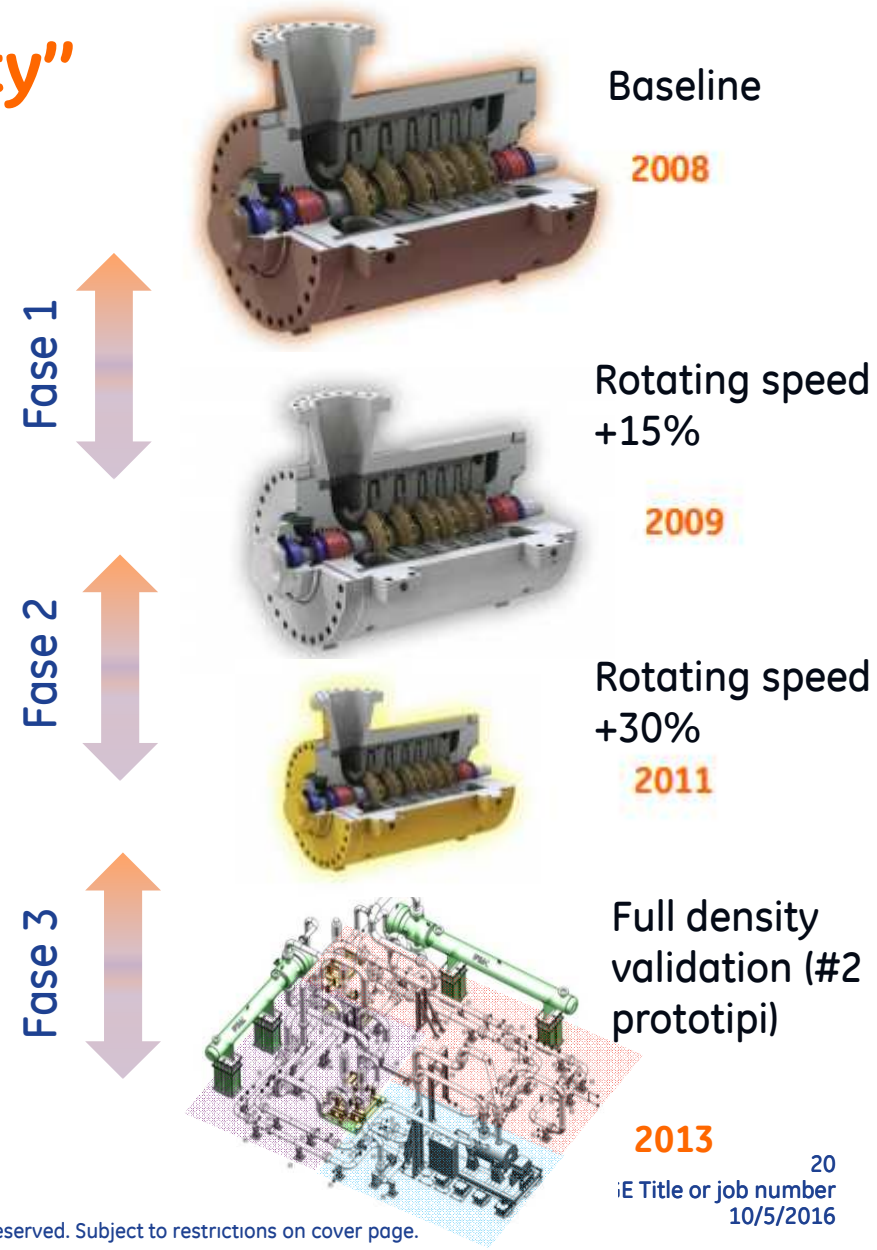
Progetto Piattaforma

Budget

Not published

Tempi

- *Fase 1* : 2008-2009
- *Fase 2* : 2009-2011
- ***Fase 3* : 2011-2013**

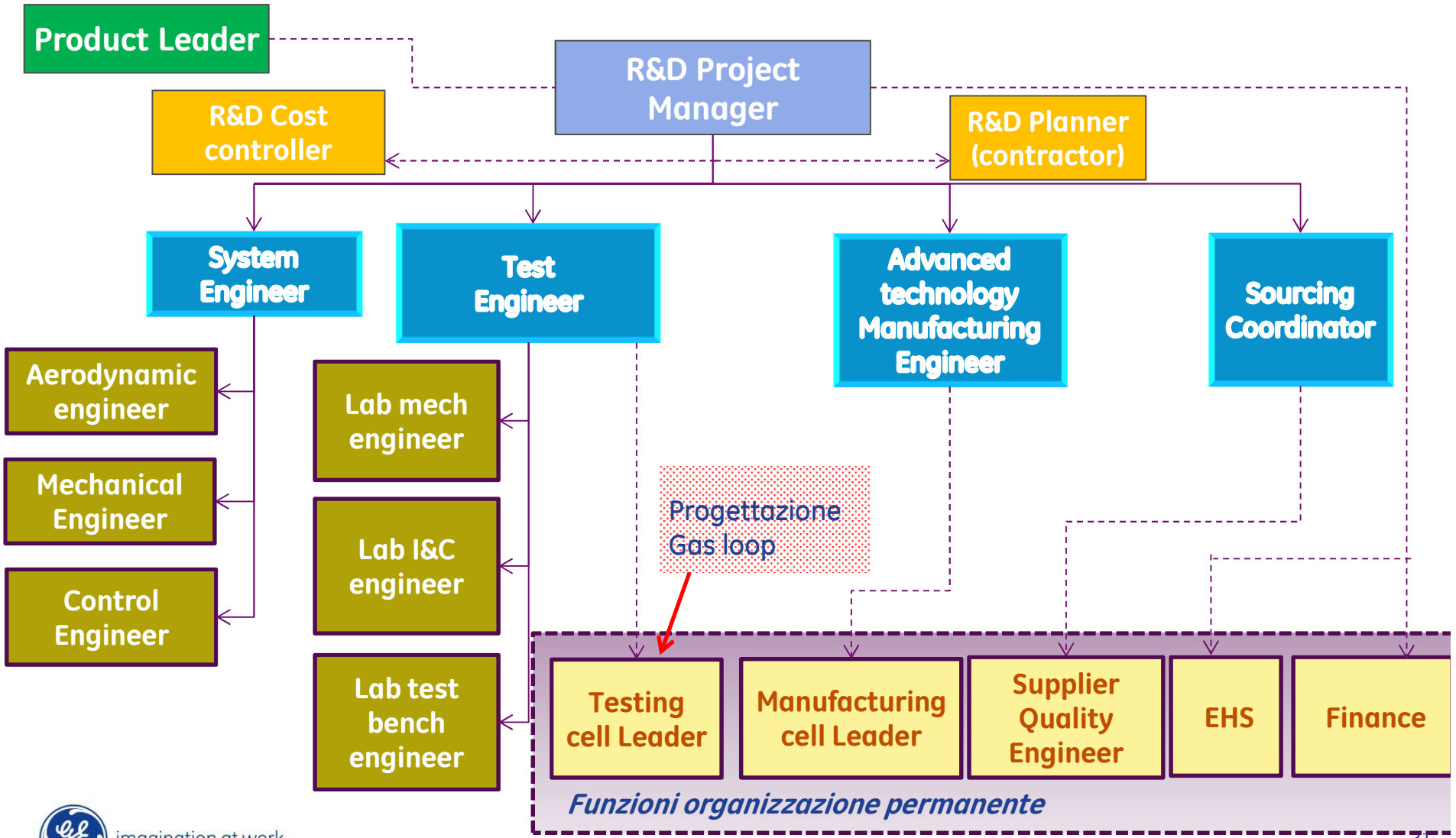


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Un progetto R&S in GE O&G

Organigramma di progetto

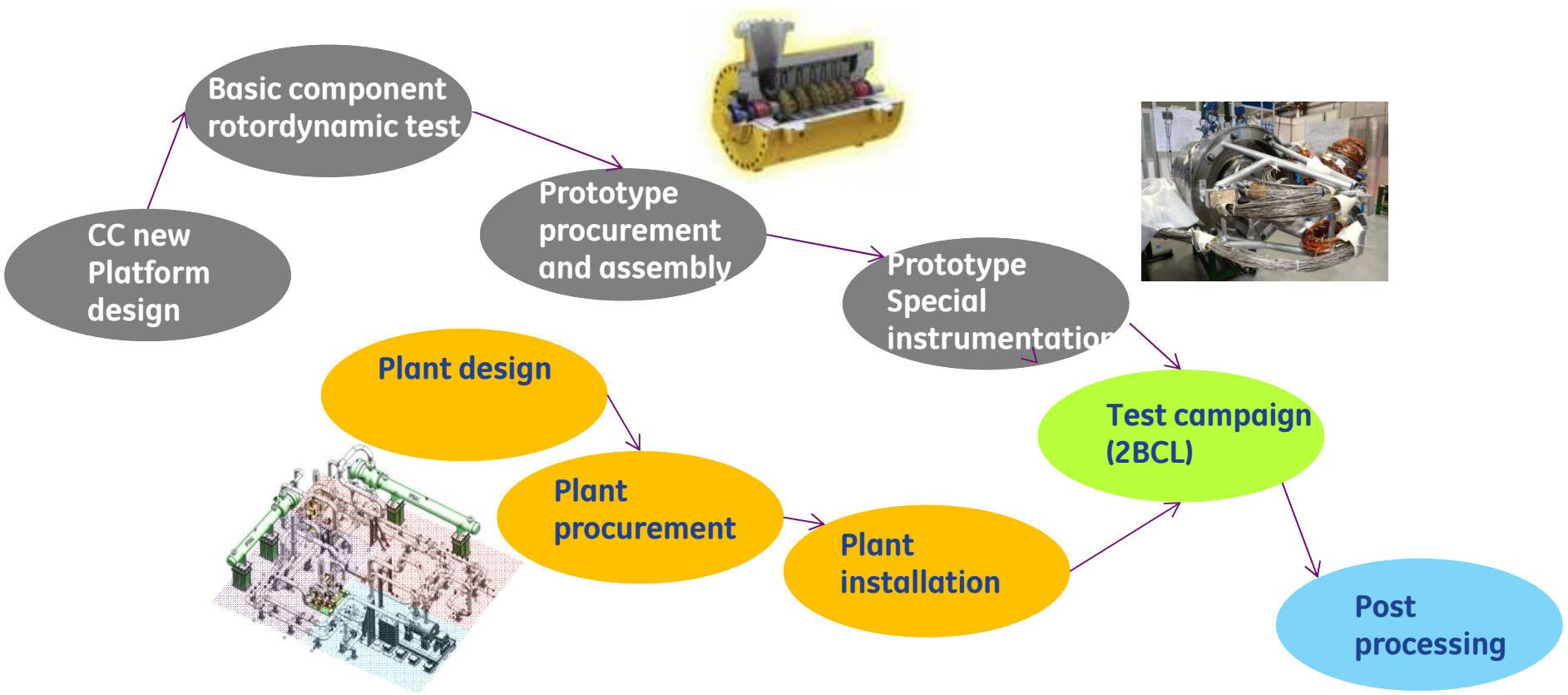


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Un progetto R&S in GE Oil & Gas

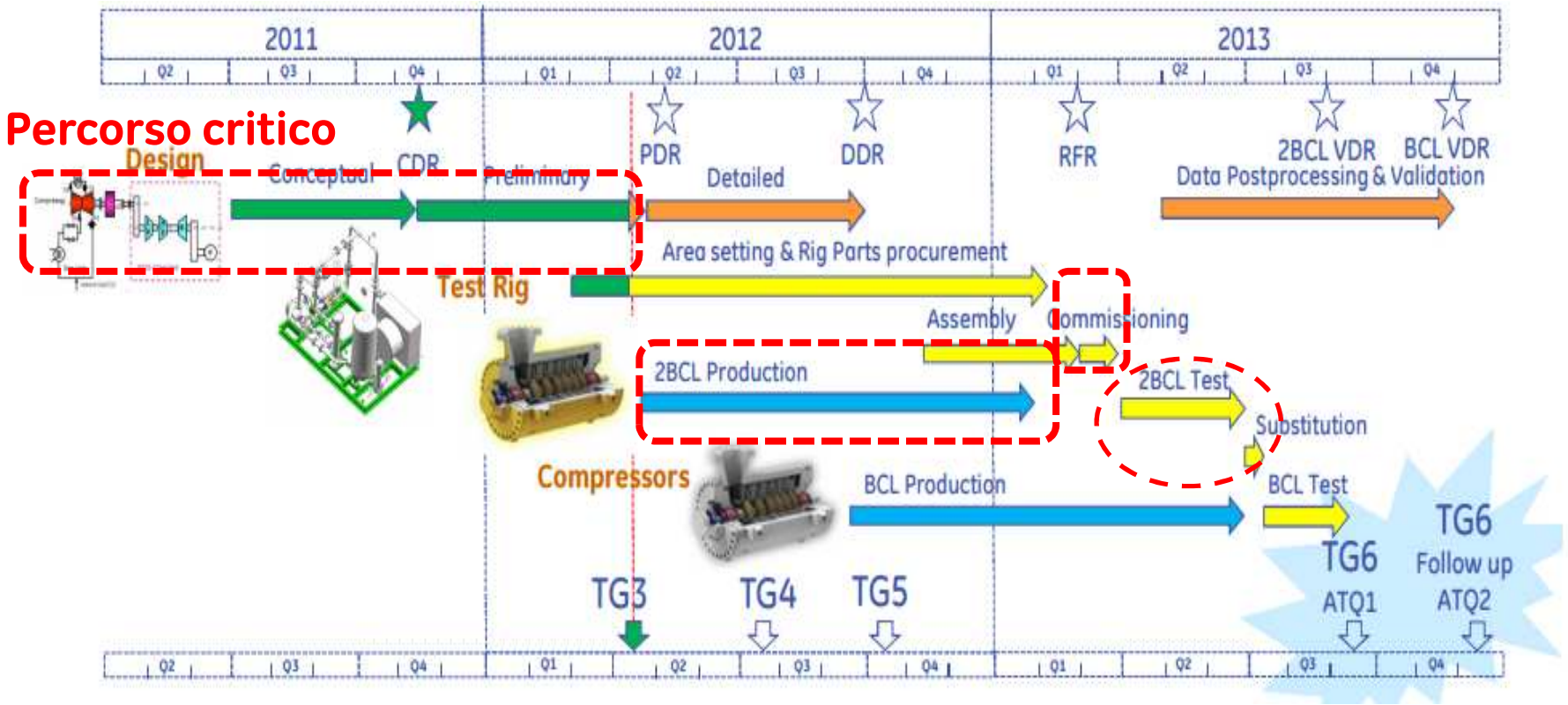
Fase #3 : High level Network diagram – prototipo #1 (2BCL)



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Un progetto R&S in GE Oil & Gas

High level Gantt diagram, TG3 review Apr 2012



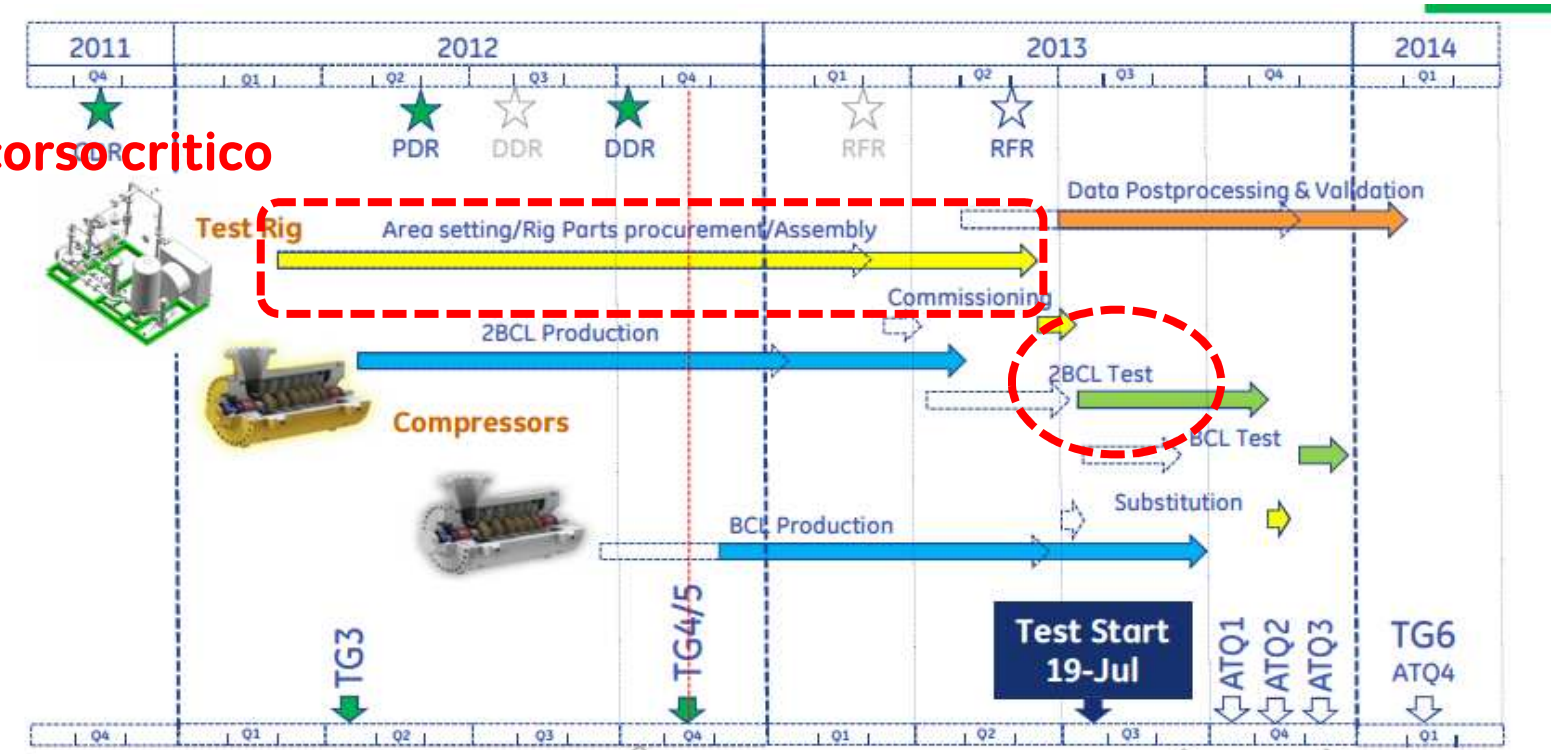
Nomenclatura GE

Le attività relative al prototipo sono sul percorso critico

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Un progetto R&S in GE Oil & Gas

High level Gantt diagram, TG4 review Nov 2012



Nomenclatura GE

Il prototipo non è più sul percorso critico

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Un progetto R&S in GE Oil & Gas

Evento #1

- A fine ‘012 modifiche alla policy di acquisto delle parti di impianto ad **alta pressione** hanno causato la revisione della strategia di sourcing del gas loop



Sfide per il project manager R&D

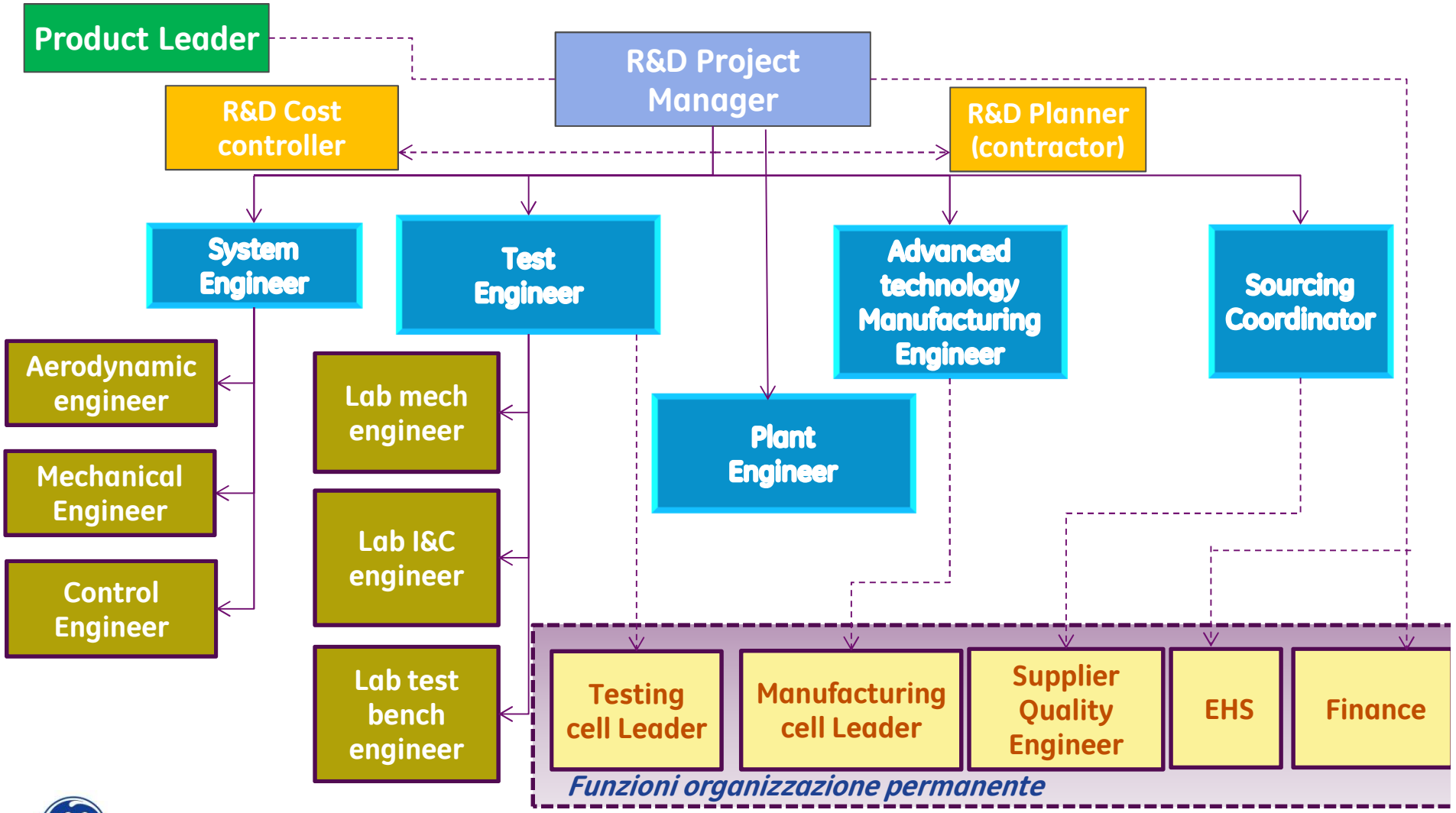
- Focalizzazione sulla ricerca **di nuovi fornitori** e sul loro rapido ‘on boarding’
- Pressione del top management per una **minimizzazione dei tempi** di slittamento della ‘approval to quote’
- **Aumento di scopo** per il team e coinvolgimento di esperti di industrial plant engineering; maggior peso del ‘supplier quality engineer’

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Un progetto R&S in GE O&G

Organigramma di progetto – azioni correttive

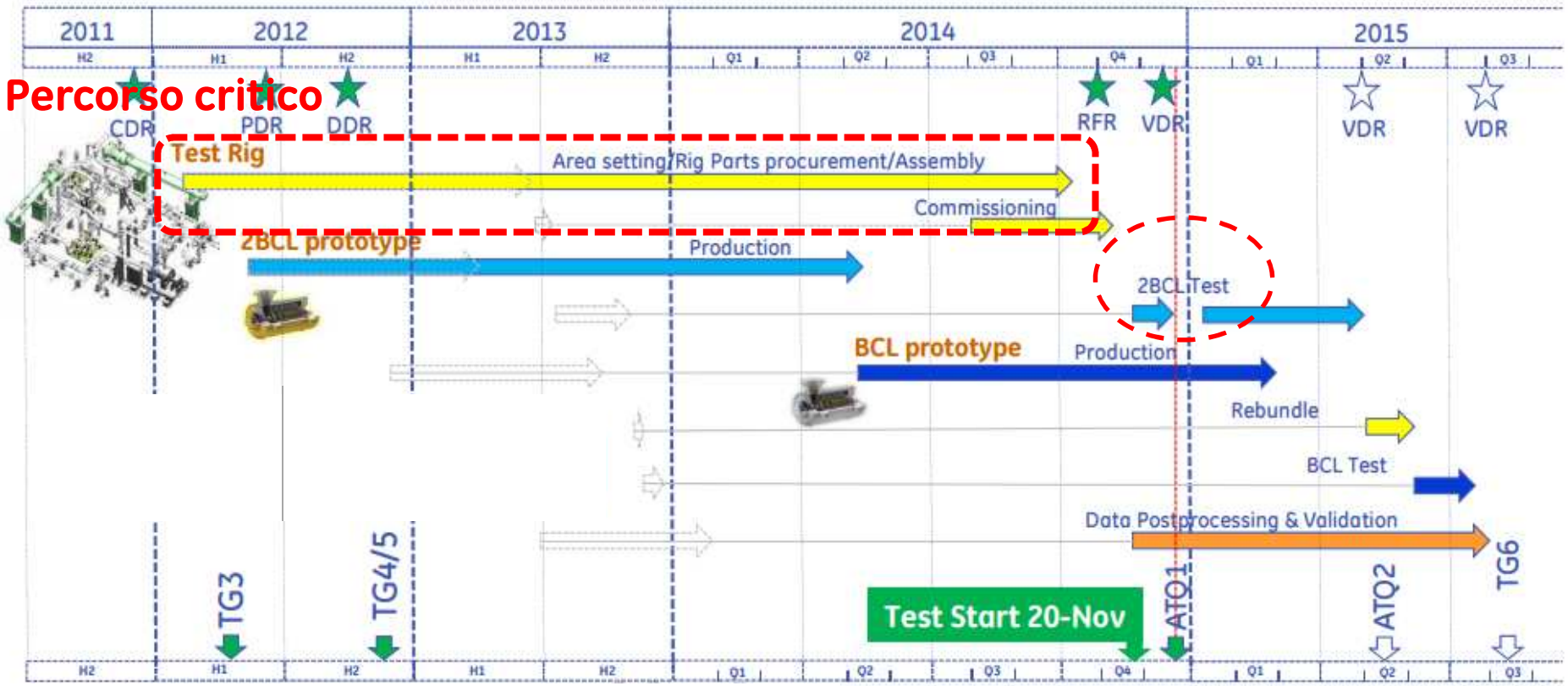


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Un progetto R&S in GE Oil & Gas

High level Gantt diagram, Approval to quote review Dec 2014



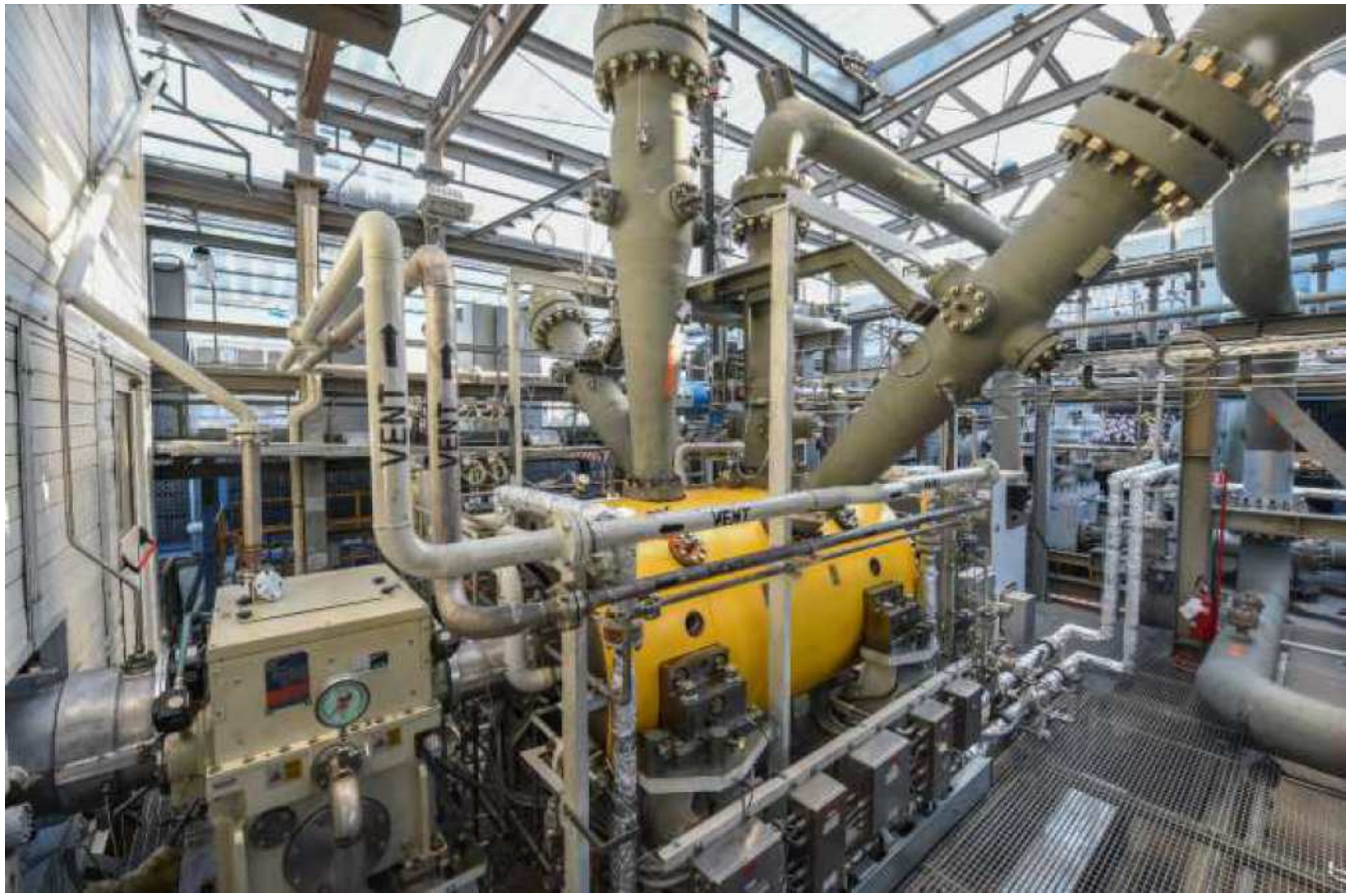
Nomenclatura GE

Lo “slippage” del test determinante per il progetto

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Un progetto R&S in GE Oil & Gas

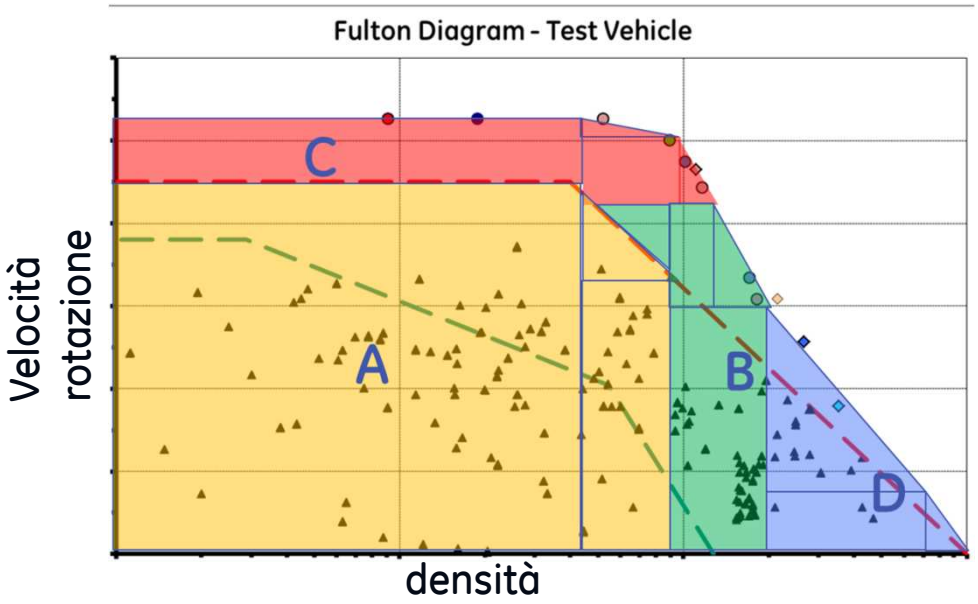
Impianto ‘Gas loop’ con prototipo #1, Dic 2014



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Un progetto R&S in GE Oil & Gas

La ‘traiettoria’ sperimentale del progetto





pianificata A + B + C → D

Prototipo #1 — Prototipo #2

effettiva A → ~~B~~ + C → B → D

Prototipo #1 — Prototipo #1 — Prototipo #1 — Prototipo #2

I cambi di ‘traiettoria’ sono importanti cambi di scopo

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Un progetto R&S in GE Oil & Gas

Evento #2

- Durante la campagna B+C , la rottura di una sonda speciale (failure tecnologico) ha causato danneggiamento delle parti interne compressore, con arresto temporaneo della prova



Sfide per il project manager R&D

- **Responsabilizzazione del test engineer** per chiusura azioni di recupero
- **Riduzione dell'impatto** sui tempi di re-test
- Rifocalizzazione del team di progetto sul rilascio di deliverables '**parziali**' per il business

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Un progetto R&S in GE Oil & Gas

Risultati del progetto



Scopo

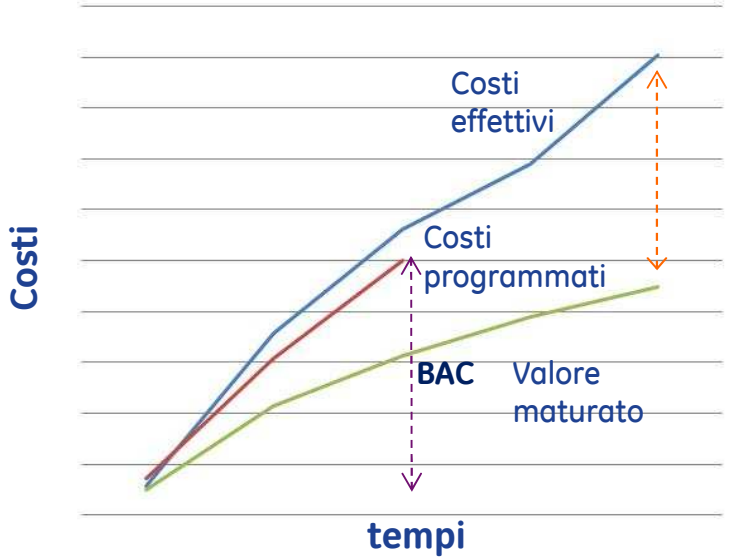
Validazione eseguita su aree A, B, C

Costi

Aumento costi per cambio filosofia «buy» e debole accuratezza della baseline

Tempi

Allungati per rework su impianto e 'stop & go' di budget



BAC = Budget at completion
(Costo totale programmato al completamento)

Il Project Management è stato un successo?

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Un progetto R&S in GE Oil & Gas



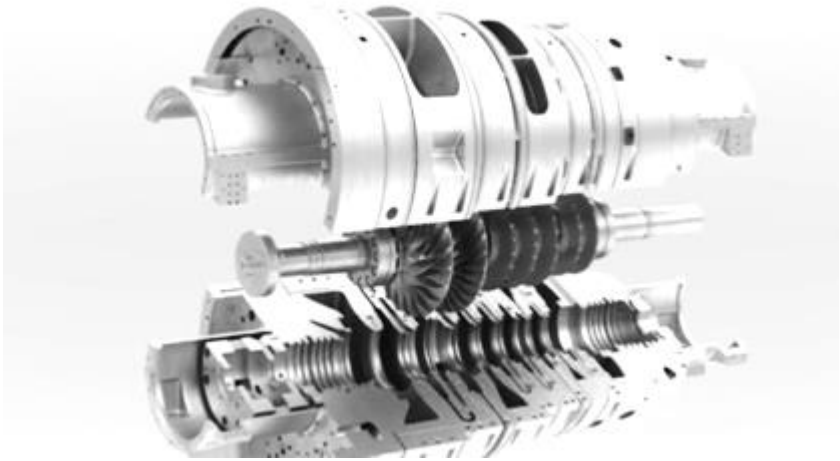
Feedback dal caso studio

- **Leadership** del PM nel rifocalizzare il team sugli obiettivi per le frequenti variazioni di rotta
- Il top management è uno **stakeholder** fondamentale
- Una baseline **non accurata** condiziona scelte di business
- Attività di «routine» lasciate alla **organizzazione permanente** possono costituire un rischio da gestire

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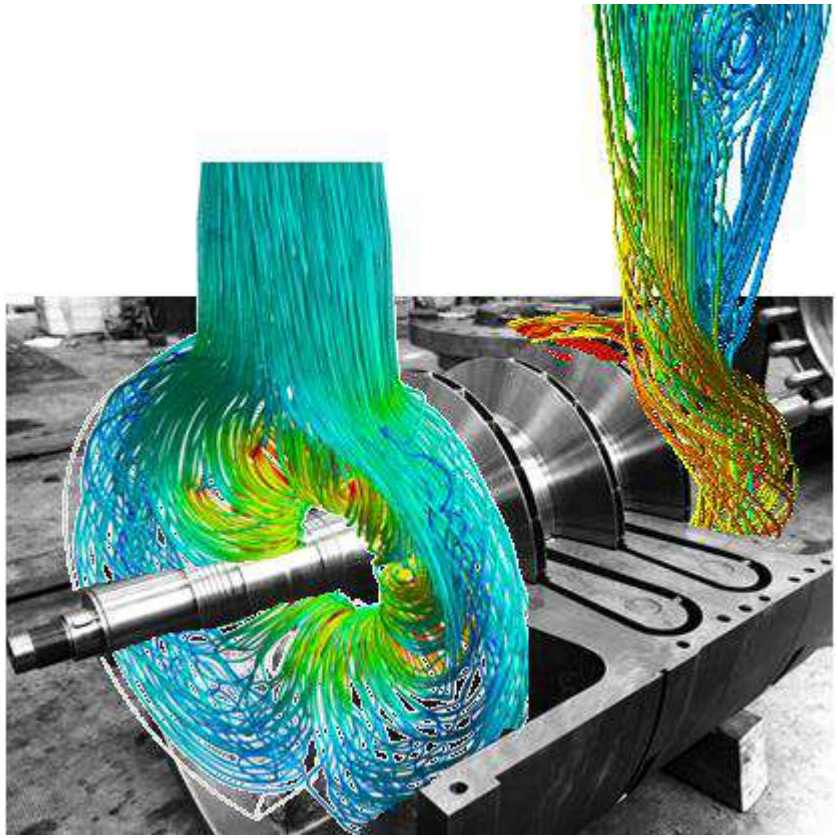
Conclusioni

Raccomandazioni finali

- L' approccio **strutturato** alla innovazione con il Project Management aumenta le probabilità di successo

- La gestione del **Portafoglio** R&S moltiplica le probabilità di successo dei singoli progetti

- Il Project Manager R&S è un professionista **resiliente** e abituato alla gestione del cambiamento (traiettorie)



Il Project Management è uno dei motori dell'innovazione

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Conclusioni

«..Non c'è niente di più difficile che introdurre un nuovo ordine di cose..»



N.Machiavelli, 1510

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