

Costing Future Complex & Novel Projects Acquisition Research Symposium



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5 May 2016, Monterey, California

- Project funded by EPSRC
- Carried out with Dstl (Jefferis)
- Parallel work – co-ordinated
- Reviews by Prof. David Kirkpatrick
- 1 July 15 – 30 June 16: proof of concept
- Develop ‘public good’



Disclaimer

- All views my own
- Do not represent those of other participants
- Do not represent those of third parties
- Work in progress – this is last week's version!

The problem

- Cost matters
- BBP – Consciousness (DARJ)
- Leadership – FinMilCap - flex
- Cost is a design issue – Rosetta stone
- Corporate memory lacking – cost ‘lens’

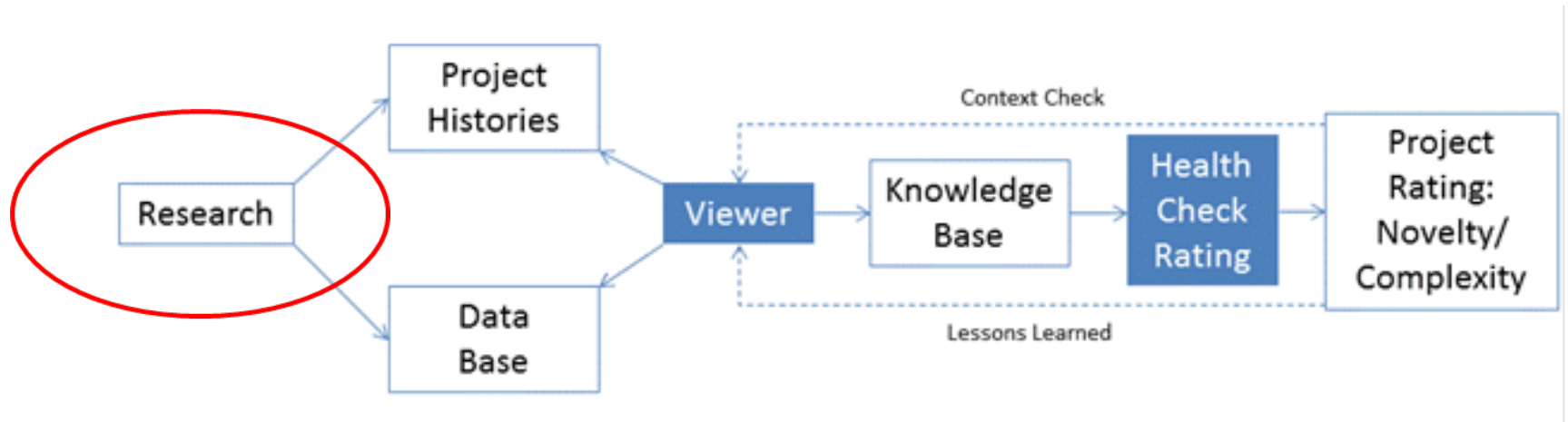
The project

- Concept/pre concept forecasts
- RDT&E, Procurement, O&S and links
- Database of historic defence costs
- Project histories & contextual information
- Air systems initially (ASTOVL/UCAV)
- Maritime and systems (carrier strike)

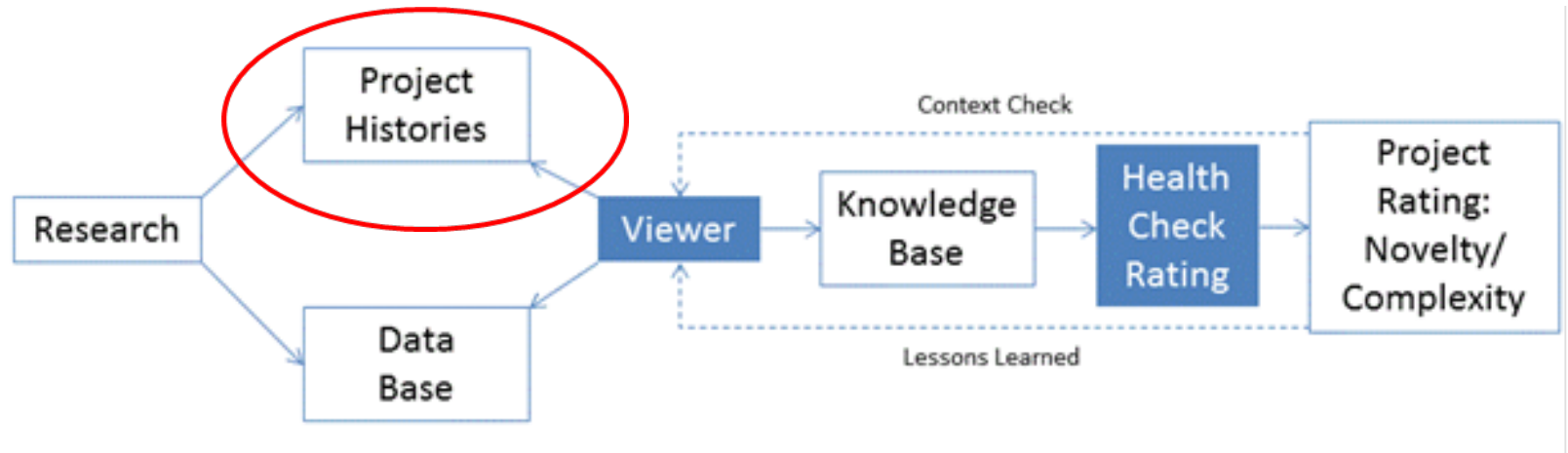
The project

- Not a model – complements
- Heuristic/‘therapeutic’ (blinders off)
- Create ‘smart customer’
- Link to current methods
- Proof of concept
- User trials (MOD/industry/aerospace etc.)

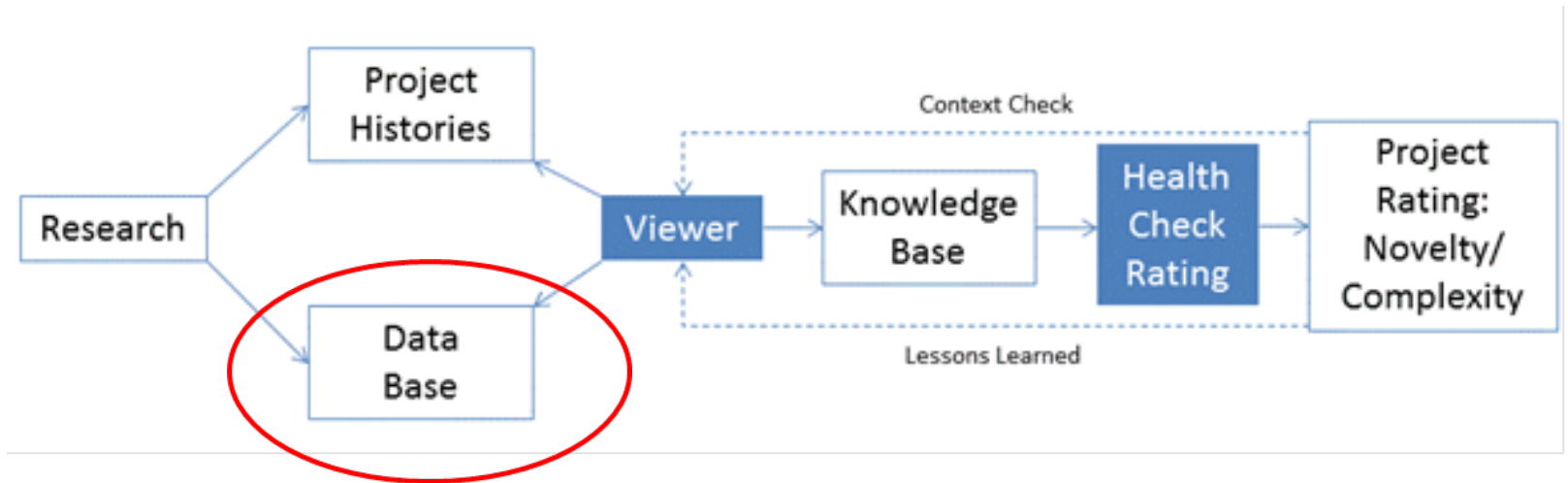
The project



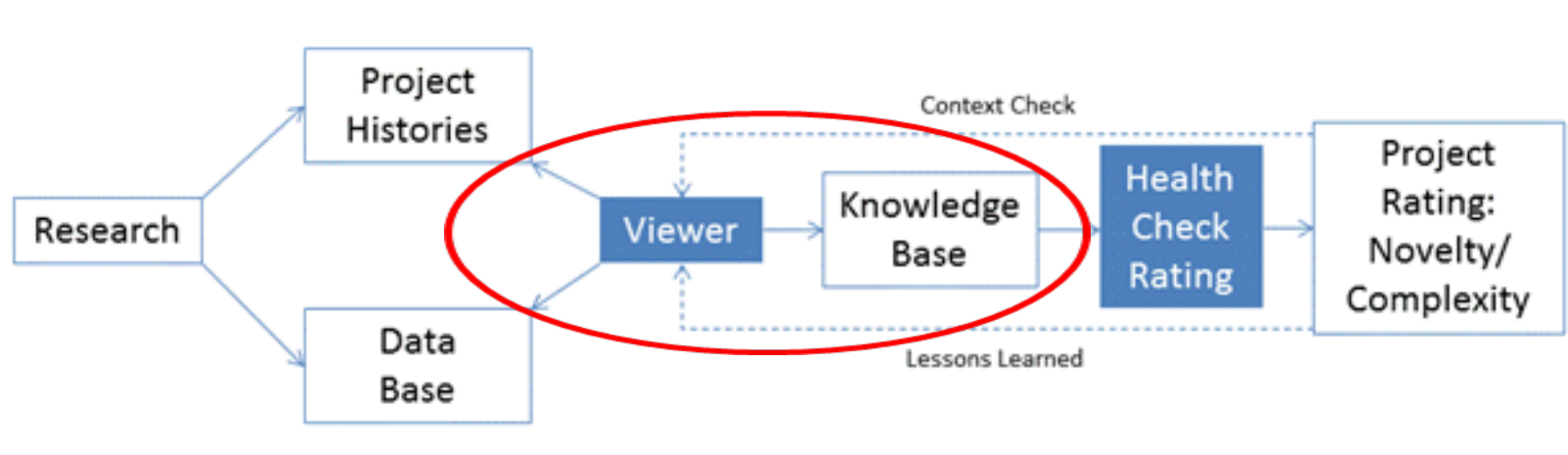
The project



The project



The project



Viewer tool

Text -
histories

Data –
graphical

Data –
numerical

Timeline - markers

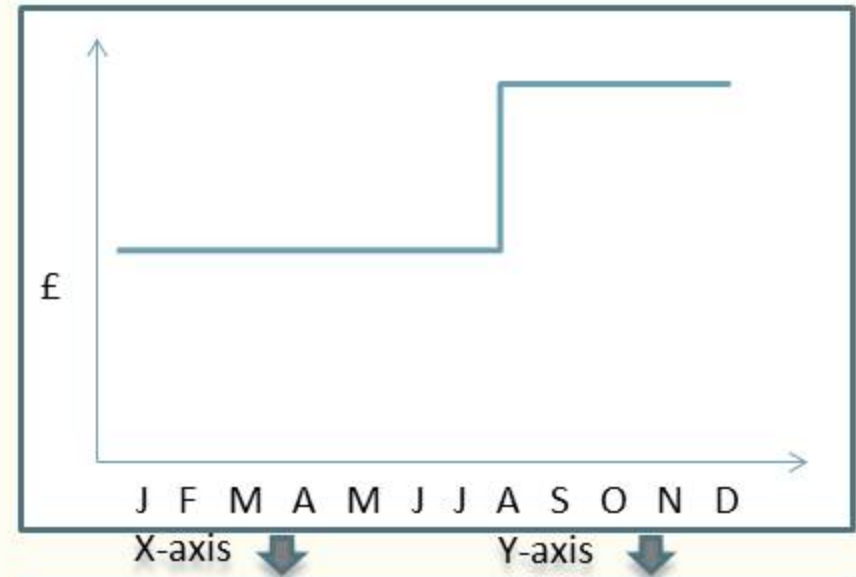
2nd August 1985 – Turin Agreement

Armament Directors from UK, FRG and Italy agree to proceed with Eurofighter.

France withdraws from programme

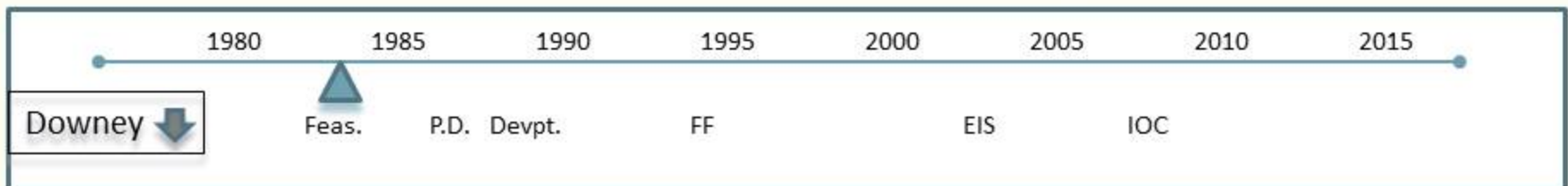
Spain later signs but is still considering Rafale at this point.

Feasibility studies had not shown a single, joint design that was acceptable to all five nations, but the three signatories did have a common design (9.75t) despite UK preference for an 11t aircraft (Refs: [Flight article](#), [NA PREM file](#))



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UK m	£2.5	£2.5	£7.5	£7.5
FRG m	10 DM	10 DM	30 DM	30 DM
It b	2.5 L	2.5 L	7.5 L	7.5 L
Fr m	30 F	30 F	30 F	30 F
Sp	0 Pt	0 Pt	0 Pt	0 Pt

X-axis Y-axis



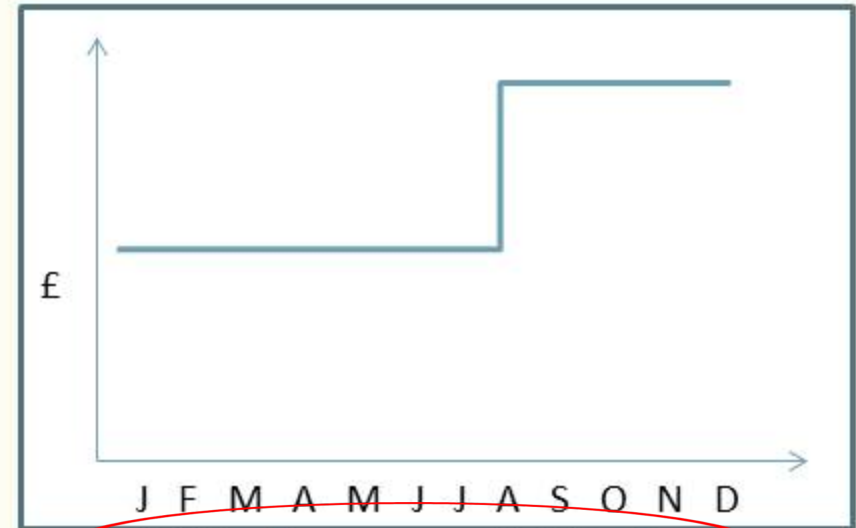
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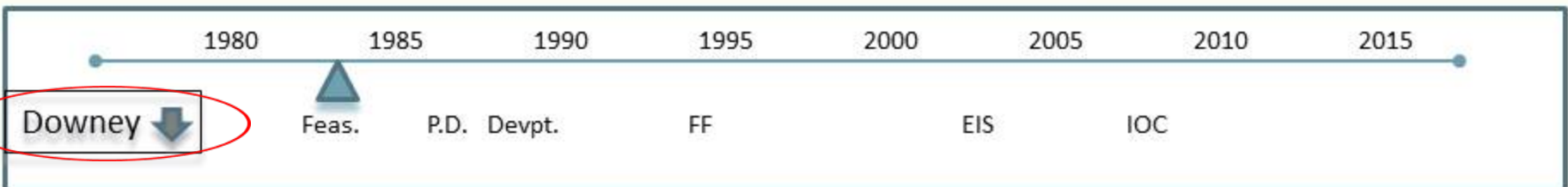
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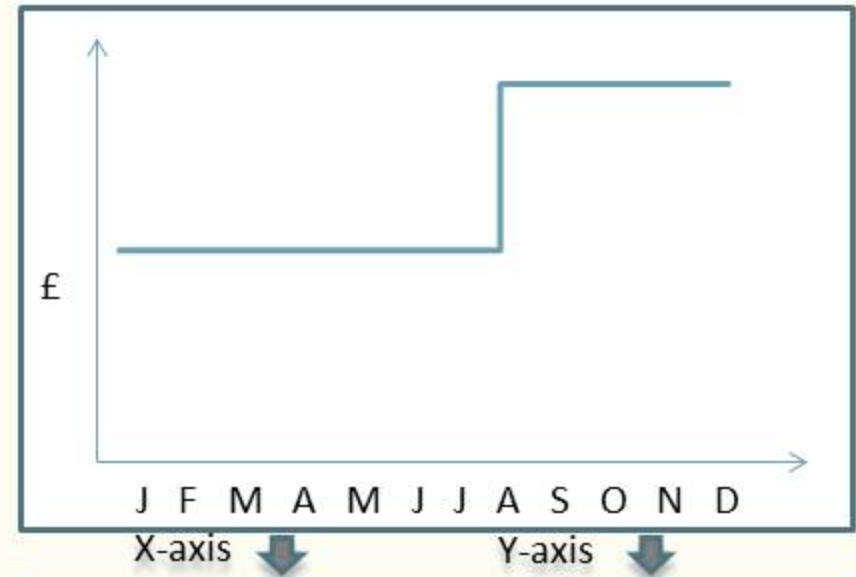
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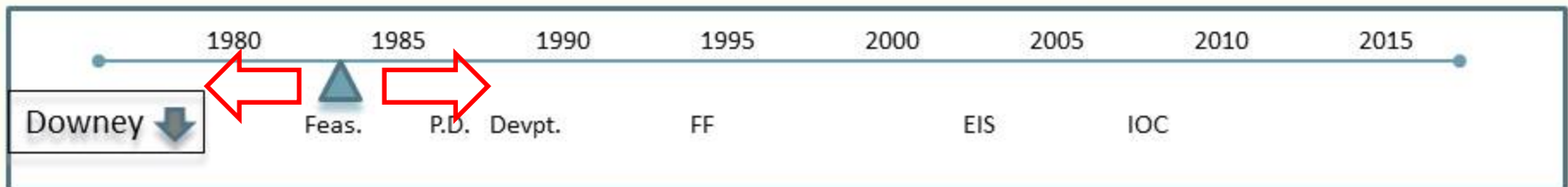
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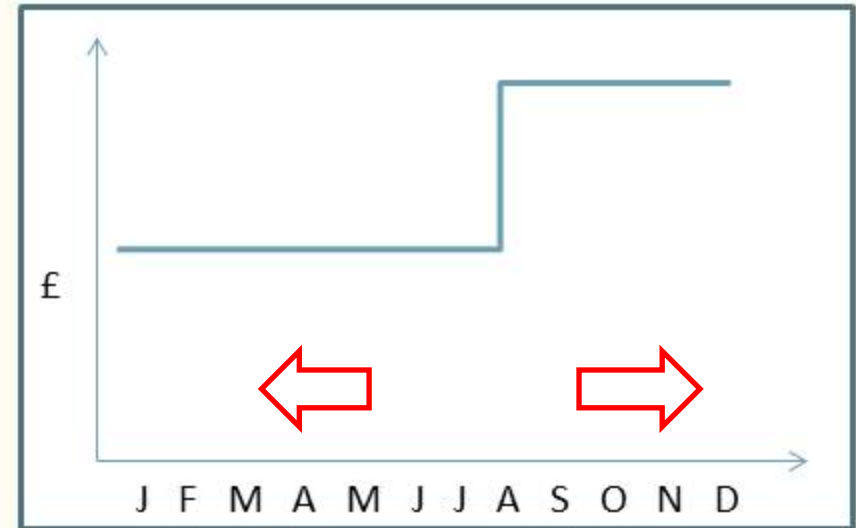
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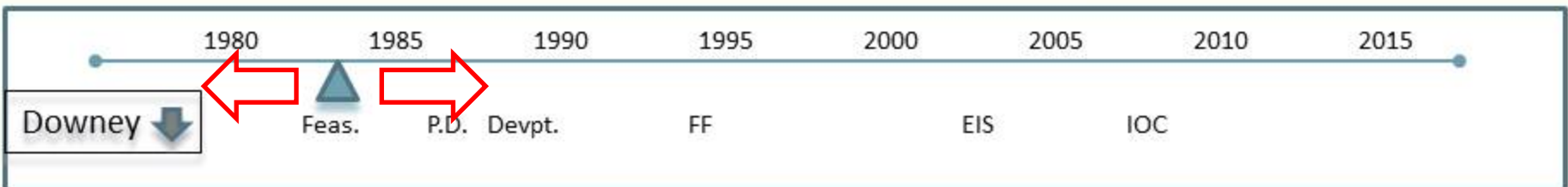
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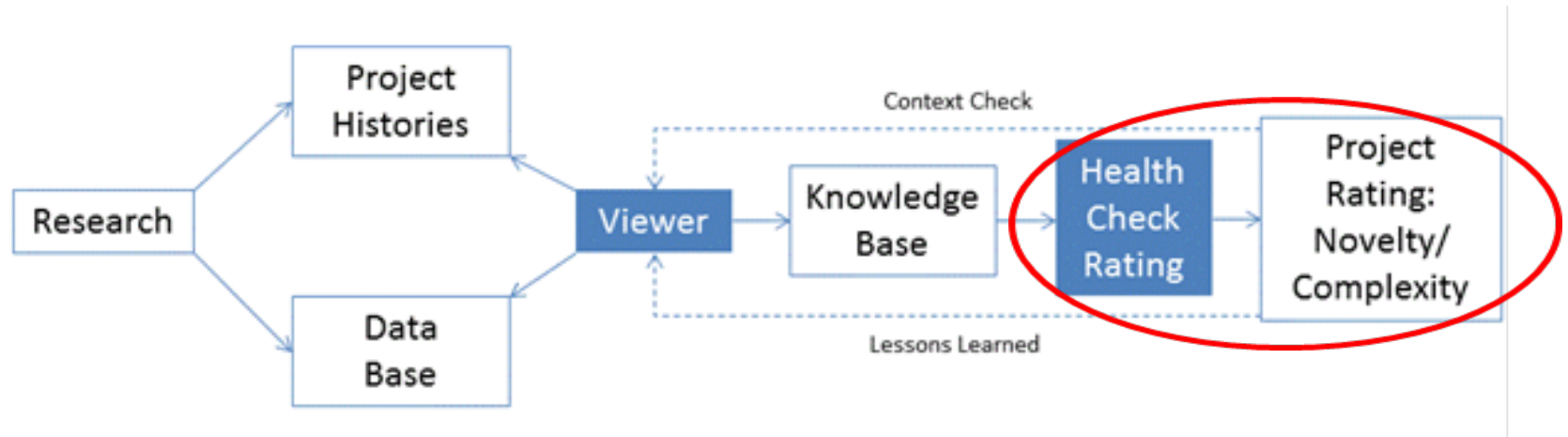
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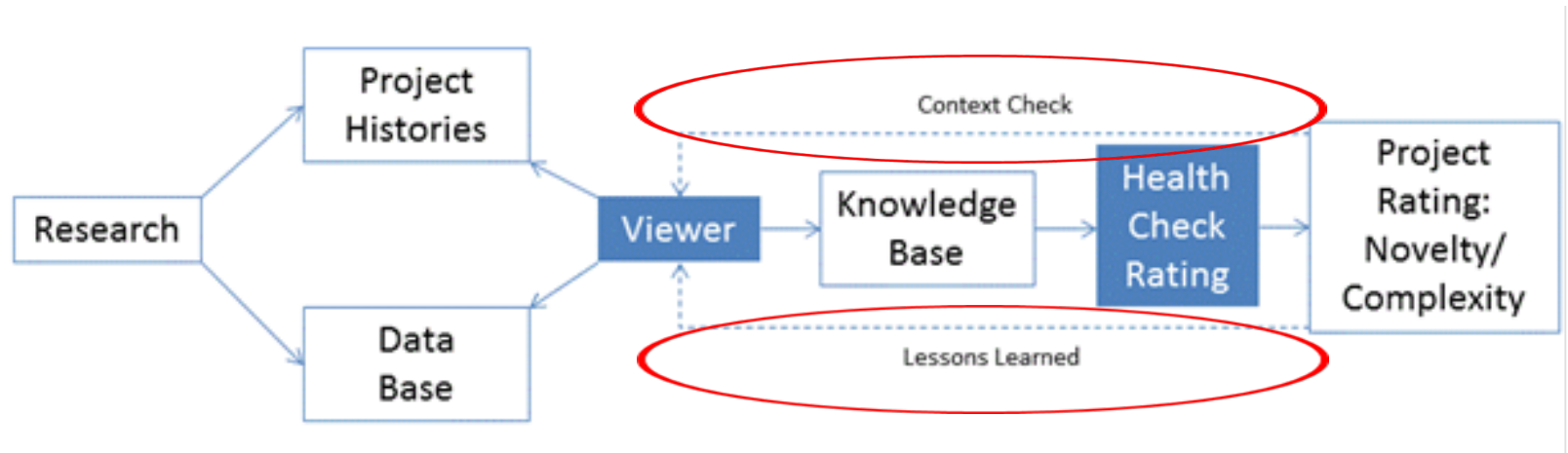
The project



Rating

- Qualitative/subjective inputs
- ‘Polling’ of group(s)
- Capture diverse views
- ‘Cooper Harper’ style hierarchy
- Alphanumeric output
- Acts to identify ‘true likeness’

The project



Technologies

- HTML5 – platform agnostic/future proof
- Meta tagging – ‘Google’ type searching
- Open development by users
- Runs secure/shared/stand-alone
- CD/network/online
- Simple/intuitive/adaptive



945131 [RF] © www.visualphotos.com

Currently 'vanilla'
proof of concept



945131 [RF] © www.visualphotos.com



ICE CREAM

Users' preferred
flavors

Future

- “We haven’t got the money, so we’ve got to think!” Rutherford, Manchester

R.V. Jones, Bulletin of the Institute of Physics (1962)¹³

- Air Systems Programme Data
- Low Cost by Design network
- Oxford – Newton Project
- Forecasting/contracting
- Method works for US?



hardware has been needed to overcome

5. Whilst it must be conceded that the technical problems involved in the Requirement, with its exacting combination of supersonic performance, low level flight, long range and short take-off, were under-estimated from the beginning by all concerned, there has been, nevertheless, a signal failure by the main contractors to control costs in the design office, on the shop floor and through the many sub-contracting firms, and a failure to ensure that, throughout their staff engaged on the project, cost consciousness was as strong as consciousness of the need to meet the technical and time goals of the programme.

Source: UK National Archive, AVIA 65/1826

Thank You.

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