The Impact of Good Requirements Analysis

A Human Genomes Platform Project Case study

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What is Requirements Analysis?

Requirements, specifications and models are the building blocks for a new or enhanced system.

Current state

User Stories/Use Cases

Business rules

Community constraints

Domain knowledge

Technology

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Why requirements analysis is a group activity

- Some are deep in the weeds
- Working at different levels

The business analyst is neutral.

Guides, elicits, shapes.

Group review:
- shapes, scopes requirement
- builds team, trust
- clarifies strengths

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The role of the business analyst

- Not a subject matter expert
- Quickly builds rapport with end users & key stakeholders.
- Prickly stakeholders are our specialty.
- Get us in early.

Why not just get requirements from a subject matter expert directly?

Skill of the BA keeps focus on project outcomes

BABOK® – internationally recognised standard iiba.org

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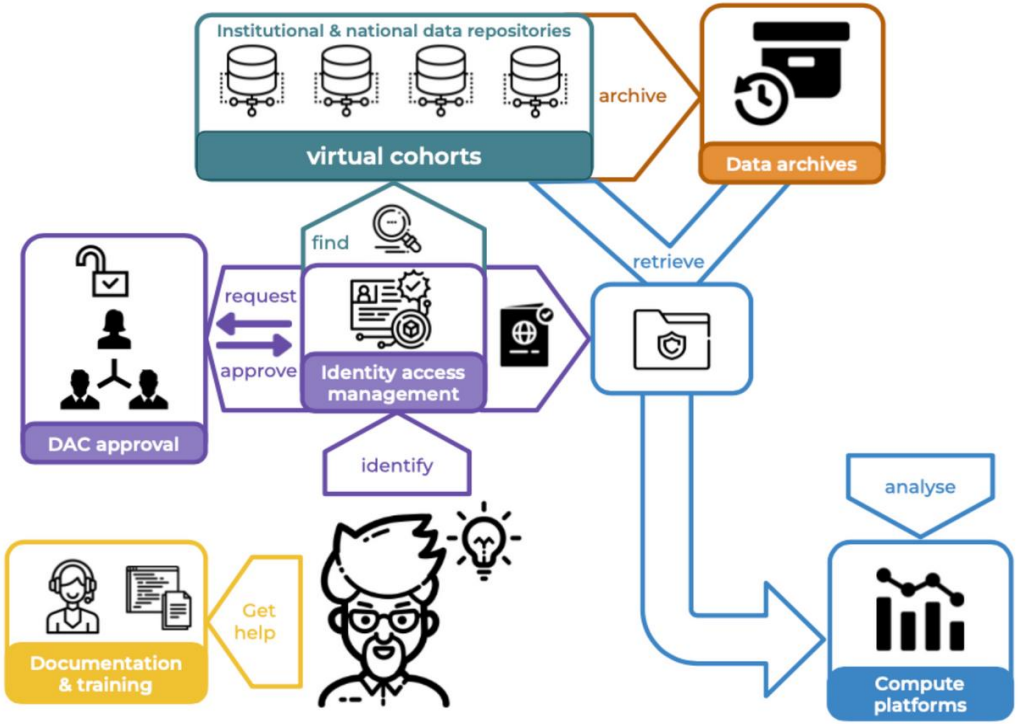
Human Genomes Platform Project

Work Packages

1. Virtual cohorts
2. Streamline the Data Access Control (DAC) committee process
3. Federated identity and access management
4. Data and metadata archiving
5. Documentation and training



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Human Genomes Platform Project Partners

What we knew when we started

1. Datasets can be siloed
2. Valuable and yet sensitive
3. No dedicated identifier
4. Onshore - NAGIM and Australian Genomics work
5. Globally - GA4GH, EOSC Life, NIH, EOSC Life & others work

Photo by: Annette Green
GrainCorp Silos at Thallon - Queensland
Artists: Joel Fergie and Travis Vinson

What we did not know

- How data stored
- Frequency of requests
- File sizes and types
- Technology
- Policies
- Collaborations and future goals

What did we do?

User Stories & Translation:

Functional Requirements

Gathered user stories & translated to functional requirements.

Domain, Community, Technical:

Non-Functional Requirements

Consider: Global standards & international projects, domain constraints, each organisation's constraints and their current technology, technical skills within the team.

Current State Analysis

Interviewed each partner organisation as to their current state & summarised current state for each.

Gap Analysis

Compare the current state to the future state.

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Functional requirements translation

User Story - As a **Data Access Control Co-ordinator**

I need to...	**...so that**
see all the details together to be able to review a data access request	I can efficiently process requests and don't waste time going back to the researcher for further information

Requirement - **The system should**

Requirement	Func/Tech/Policy	Priority
Provide enough details on a DAC form to enable the Committee and Coordinator to review request without recourse to applicant	Functional	Mandatory

Requirements translation example

User Story - **As a Principal/Chief Investigator**

I need to...	**...so that**
Be able to add team members to my working group	they have access to the tools and resources we are using on the project.

Requirement - **The system should facilitate this…**

Requirement HGPP REQ 046	Func/Tech/Policy	Priority
Administrators can create and administer arbitrary subsets of users to limit access to tools, data and storage etc to managed workgroups and also delegate this function to other users as required.	Functional	Mandatory

Candidate Solution Assessment

Requirement HGPP REQ 046	Func/Tech/Policy	Priority
Administrators can create and administer arbitrary subsets of users to limit access to tools, data and storage etc to managed workgroups and also delegate this function to other users as required.	Functional	Mandatory

Requirement - The system should facilitate this…Candidate solution for piloting?

Addresses requirement through COmanage

Technical / other requirements translation

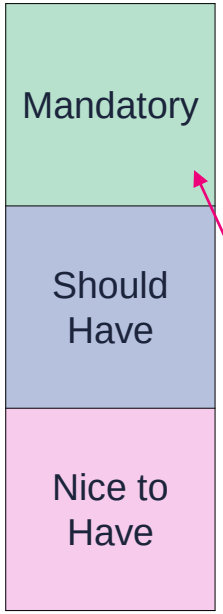
Leverage all you know about

the partners' current state technology &

technical, legal and domain constraints

to develop technical and non-functional requirements.

Group Review, Scope, Shape



3 essential questions

1. Is this requirement valid?
2. Does it fall within the scope of our subproject work?
3. What priority should it have?

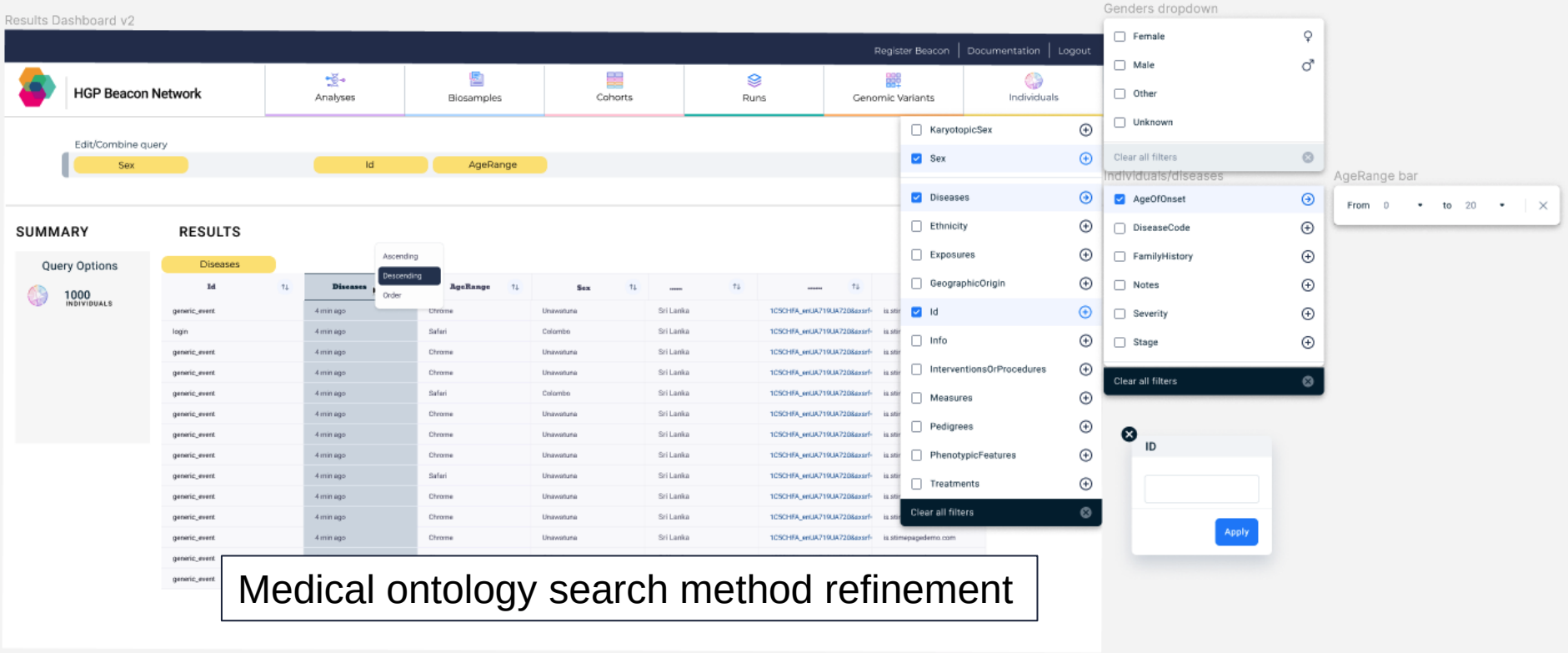
Extra shaping questions

How many/how much?
By when?

Where are we now?

- Building and documenting pilot
- Refining requirements
- Finding new requirements
- *Testing against requirements*
- *Writing training documentation based on requirements*

Refining requirements in pilot



Human Genomes Platform Project right now

- Clear plan
- Collaborative team
- Outcome focused
- Integration is easier

Feedback on the Requirements Process

John Pearson, Manager, Genome Informatics Group - QIMR Berghofer

'We always do what we call "requirements analysis" before creating new software but having been through the process with the business analyst, **what we have been doing is rocks and sticks compared to the formal process**. It made it very much easier to look at our options for DAC software and make an informed choice. So much better than doing a software evaluation and ending up with the result being, to quote a famous Qld Federal Senator… "I don't like it!"'

Takeaways

Whether captured in a matrix, in Jira/Confluence, or on post it notes or sketches

- Document requirements – if it's not written down it does not exist
- Review and shape and scope as a team
- Keep your requirements fresh
- Test your build against the requirements
- Use them as a reference for training and change docs – look for opportunities
- Use an experienced Business Analyst and entrust the process to them

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Fiona Kerr

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Sarah Kummerfeld

Conrad Leonard

Angela Lin

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Image credits

Project Kickoff Meeting
Bookly (https://www.booking-wp-plugin.com/conference-room-ideas-next-meeting/) sourced 21/7/2022
What happens in a group review (1)
https://www.inflectra.com/ideas/whitepaper/Principles-of-Requirements-Engineering.aspx viewed 24/1/22
What happens in a group review (2)
https://www.concordiacollege.edu/stories/details/10-reasons-to-look-forward-to-going-back-to-school/ viewed 25/7/2022
https://www.monolake.org/blog/page/6/ 25/7/2022
What we knew when we started
Spplied photo by: Annette Green, GrainCorp Silos at Thallon – Queensland, Silo Artists: Joel Fergie and Travis Vinson
Where are we now?
https://www.istockphoto.com/photos/rocket-launch-pad sourced 24/7/
Future Opportunities Arising
Elsa © Walt Disney https://en.wikipedia.org/wiki/Elsa_%28Frozen%29 viewed 5/8/2022
Refining requirements in pilot
Supplied - Beacon UI under development by team at Children's Cancer Institute – 30/7/2022
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"Women's Big Bash League (WBBL): Sydney Sixers all set to host maiden finalists Brisbane Heat"
https://www.dnaindia.com/cricket/report-women-s-big-bash-league-wbbl-sydney-sixers-all-set-to-host-maiden-finalists-brisbane-heat-2709783 sourced 5/8/2022