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Research IT core application suite

Outline proposal v0.4

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Purpose & Scope

- Purpose:
  - To define a ‘core suite’ of research applications widely relevant for UoM researchers and to specify the central support that will be provided for these core applications.
- Scope:
  - Applications used to advance research in the areas of compute, data analysis and visualisation that are relevant & valuable to a substantial proportion of the UoM research community and warrant central funding and extensive support.
  - Locally hosted and cloud-based applications in scope.
  - Teaching and learning specific applications are not in scope.
  - Supporting applications used by researchers, including MS Office, collaboration, project management, Adobe Suite etc. are not in scope for this model.

Objectives

Why do we need a core research application suite?

1. To help improve overall research performance and impact by enabling the broader utilisation of appropriate tools by UoM researchers.
2. To provide a spectrum of tools allowing researchers to advance through progressively more sophisticated capabilities based upon their requirements and skill levels.
3. To improve clarity about the level of support that will be provided for the core suite including:
   a) How much help, to do what, and from whom
   b) How to access and use
   c) Clear and transparent costings
4. Help ensure effective utilisation of resources by concentrating them where they can add the most value.
5. Remove non-value adding administrative overhead for research groups including licence administration, installation etc.

Note: The implementation of the core suite *will not* involve the reduction in existing support for research applications – rather the objective is to improve and enhance central support for the most in-demand apps.

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Key considerations

- Open software – Many essential applications (e.g. MATLAB) are proprietary but there is a strong desire to ensure open source applications are available for usage. Therefore the core suite should include a mix of both.
- Costs – the potential move towards site licences for the core suite may involve an increase in outlays – business case will be required to demonstrate increased value.
- Non core-suite applications – It is not the intention of this model to eliminate or reduce support for research applications not defined as part of the core suite.
- Cloud – leverage cloud-based SAAS models to enable quick response to emerging needs and minimise overhead. Many vendors investing in this area.

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Core suite – service offering

Service element	Proposed service offerings
Licencing	• Funded by core ITS budget • Site /TAH licences enabling wide usage and significantly reducing admin overhead for research groups • Licence support for all relevant platforms incl. Scre@m
Availability	• Pre-installed and ready for use on all supported platforms incl. HPC where applicable • Where pre-installation not possible, available for quick self download/install • Available for installation on personal equipment and student laptops
Support	• Consultancy engagements and specialised support available from Research IT • ITS able to provide tier one and two end-user support for common issues – Research IT to focus on training in core suite to new SEUC team • Extensive knowledge base and self-help resources available for researchers • Broad communications efforts to highlight capabilities & availability
Training	• Online self-directed training modules • Regular face to face scheduled sessions • Key element of researcher / PGR training curriculum

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Proposed core suite

Primary focus	Application	Current status at UoM
Mathematical, numerical & symbolic computing	Mathematica	Site licence in place, low-moderate usage currently
Numerical computing	MATLAB	Significant current use and licence arrangements in place
General analysis and visualisation platform	Options include: Tableau, Spotfire, QlikView, Watson Analytics	No current wide-scale implementation.
Data analysis and statistics	STATA (SPSS and SAS also options)	No site licence in place for STATA, low-moderate usage currently
Statistical programming	R	Areas of significant usage
General programming	Python	Growing usage across Faculties
Numerical computation / machine learning	TensorFlow	Low-moderate current usage
Compiler	Intel / GNU	Low-moderate current usage

Core suite demand spectrum

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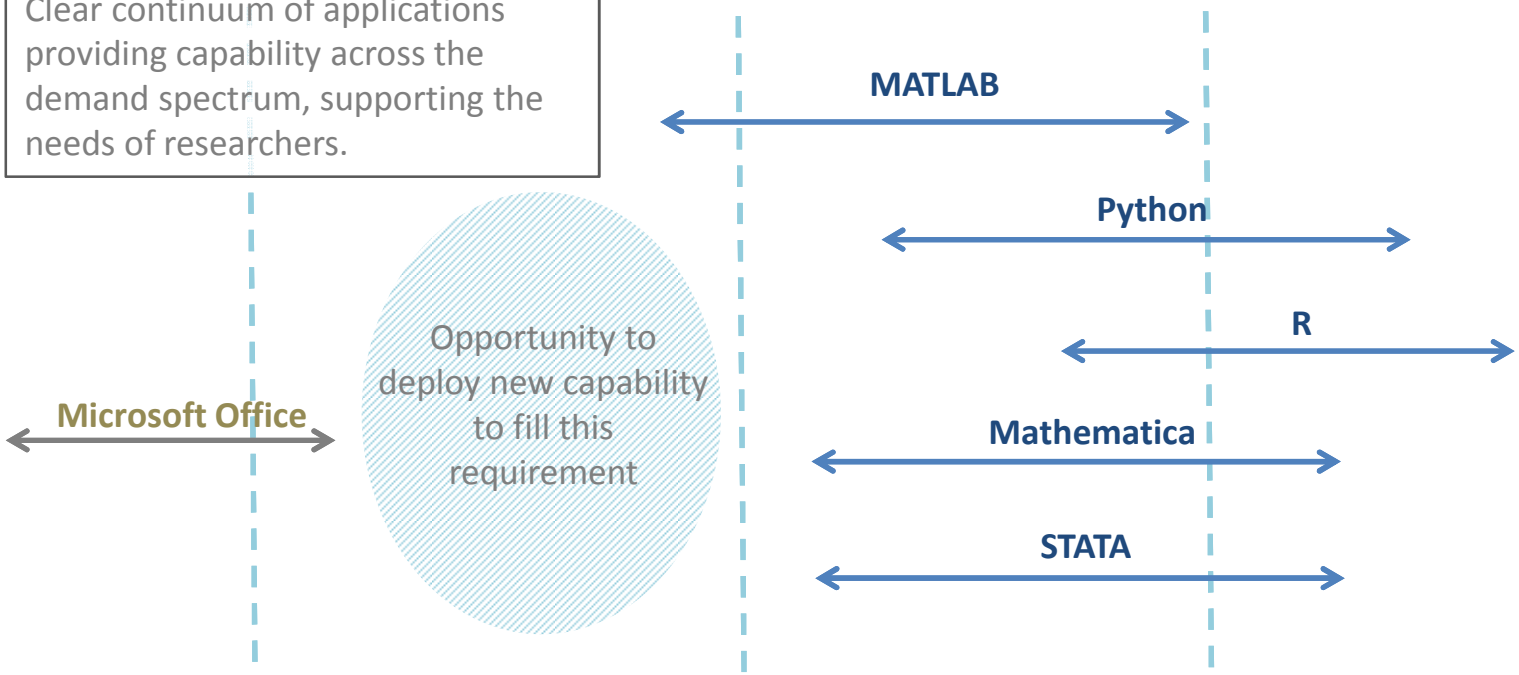
Clear continuum of applications providing capability across the demand spectrum, supporting the needs of researchers.



Level of complexity	Relatively simple analysis and visualisations not requiring significant technical skill or expertise. Self-guided training generally sufficient to get started.	Moderately complex applications and technologies requiring some level of technical skills and knowledge to utilise effectively. More in-depth training and support required.	Complex technologies and programming languages requiring advanced skills and significant experience to utilise effectively. Formal training and ongoing support required.

Candidate applications to complete core suite

- Potential applications to meet the need for a highly usable & flexible visualisation and analysis tool include the following:
  - Tableau
  - Spotfire
  - QlikView
  - IBM Watson Analytics
- It is planned to conduct a limited pilot of some or all of these applications with an assessment against an agreed set of criteria.
- Following the selection of the preferred tool(s), a business case will be developed based upon the required investment to acquire and implement.

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Next steps

1. Consultation on proposed core suite applications:
   - Are these the right set of applications?
   - Should we include or exclude any?
   - Is the service offering appropriate?
2. Conduct evaluation of candidate applications for new broad-based analysis and visualisation capability.
   - Research IT governance group to nominate pilot group
3. Build business case for site licences where required
4. Execution, including training, communications and other deployment activities.