

Towards eResearch Nirvana

Matthew Bellgard¹

¹eResearch Office, Queensland University of Technology, Brisbane, Australia, matthew.bellgard@qut.edu.au

INTRODUCTION

Nirvana conjures up an idyllic state - a place of perfect peace and happiness. In some religions, Nirvana is the highest state that someone can attain, a state of enlightenment, of 'being' where a person transcends individualistic desires and suffering is non-existent¹. As we consider this era of digital disruption, a time depicted by rapid transformational change, oftentimes referred to as the 4th industrial revolution, the only constant we can confidently depend upon is rapid change. eResearch is the term given to the role of digital disruption in disciplinary, multi-, inter- and trans- disciplinary research where every research question can be framed in the context of eResearch touch points at different stages along the innovation journey.

Given the breadth of the dynamic research environment, is it at all conceivable that one can arrive at an eResearch Nirvana? And if one were to arrive at such a place, what might we find there? Is there an optimal path and to what degree can developed patterns be reused?

THE eRESEARCH CHALLENGE

When undertaking research, eResearch touch points might include: digital platforms; data management, open data, curation, governance, access, and privacy; Internet of Things; artificial intelligence; decision support; bioinformatics; security; visualization; advanced analytics; network latency challenges; high performance computing and cloud computing.

The challenge is to identify and transcend eResearch blockers along each research project lifecycle. Every research problem will inevitably present legacy eResearch challenges that must be navigated as well as to scope the breadth of technical and socio-technical challenges to devise innovative strategies to ultimately ensure technological solutions are fit-for-purpose and best-of-breed. In addition, getting the balance right between developing a valuable institutional research data management policy on the one hand yet also dynamically catering for the eclectic research data management and analytics needs of researchers and their evolving interactions with external collaborators on the other, must be continually navigated [1].

eRESEARCH EXEMPLARS

This presentation reflects on the stages to eResearch enlightenment and a number of case studies from various disciplines are explored that advocate and demonstrate eResearch solutions embracing automation, transparency, scalability, security, collaboration and end-user engagement. Solutions outlined will be drawn from research data management [1], digital health [2], HASS, bioinformatics [3] and medical imaging [4].

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¹ <https://www.vocabulary.com/dictionary/nirvana>