Academic Libraries in a digital, global world

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About Lancaster University

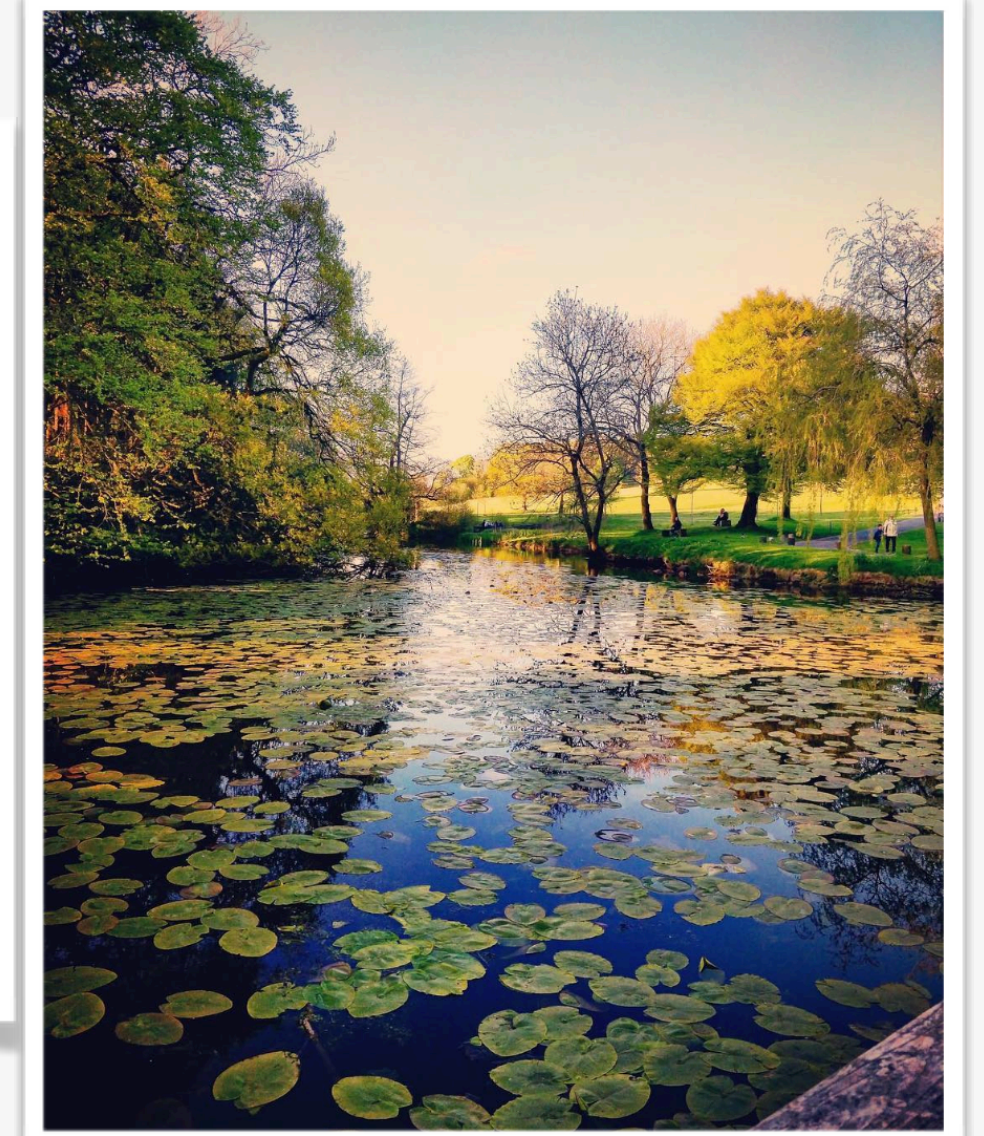Top 10 in the UK (6th, 9th and 8th)

135 QS, 150 THE

TEF Gold Award

The Times and The Sunday Times University of the Year 2018

Top University in the North West

13000 students

Campuses in Ghana and China

About Lancaster University Library

Joint top position in THE Student Experience Survey 2017 and 2018

92% NSS score

Learning Zone for informal study and Ruskin Research Centre and Library

Four main staff teams: Academic Services, Digital Innovation & Research Services, Operations & User Services, and Learning Development

Libraries in Ghana and China

Digital disruption and leadership

Bridging the digital skills gap

Libraries as incubators of scholarly development

Tackling the challenges

Digital Disruption and Leadership

Digital disruption and academia:
Are we ready for uberversities in 10 years? *

Data, Technology, and the Great Unbundling of Higher Education **

Users' behaviours have changed - iGen project *

Transition from *"User in the life of the Library"* to *"Library in the life of the user"* **

Mapping the Future of Academic Libraries - SCONUL

there is no equivalent venue to the physical library online, only signposting to disparate resources.

Digital Equivalence of Experience?

Library as a *service-provider*, *partner* and *leader*

Reshaping Scholarship - RLUK Strategic Plan 2018-2021

Open Scholarship - Creating a new environment for the transformation of research

A Collective Approach - Reshaping modern research library collections

Reshaping Scholarship - RLUK Strategic Plan 2018 - 2021 <u>available here</u>

NMC Horizon Report - 2017 HE Edition

Consumer Technologies
> Drones
> Real-Time Communication
  Tools
> Robotics
> Wearable Technology

Digital Strategies
> Location Intelligence
> Makerspaces
> Preservation &
  Conservation Technologies

Internet Technologies
> Blockchain
> Digital Scholarship
> Internet of Things
> Syndication Tools

Learning Technologies
> Adaptive Learning
  Technologies
> Microlearning
  Technologies
> Mobile Learning
> Next-Generation LMS
> Virtual & Remote
  Laboratories

Social Media Technologies
> Crowdsourcing
> Online Identity
> Social Networks
> Virtual Worlds

Visualization Technologies
> 3D Printing
> Information Visualization
> Mixed Reality
> Virtual Reality

Enabling Technologies
> Affective Computing
> Artificial Intelligence
> Big Data
> Electrovibration
> Flexible Displays
> Mesh Networks
> Mobile Broadband
> Natural User Interfaces
> Near Field Communication
> Next-Generation Batteries
> Open Hardware
> Speech-to-Speech
  Translation
> Virtual Assistants
> Wireless Power

NMC Horizon Report > 2017 Library Edition

Advancing innovative services and operations requires a reimagining of organizational structures

Enabled by digital scholarship technologies, the research landscape is evolving

Artificial intelligence and the Internet of Things are poised to amplify the utility and reach of library services.

NMC Horizon Report > 2017 Library Edition available here

Gartner Top 10 Strategic Technology Trends for 2018

INTELLIGENT

AI Foundations

Intelligent Apps and Analytics

Intelligent Things

DIGITAL

Digital Twins

Cloud to the Edge

Conversational Platforms

Immersive Experience

MESH

Blockchain

Event-Driven

Continuous Adaptive Risk and Trust

Library towards 2020

We will facilitate excellence for all of our users through the physical and virtual environments we manage, as well as the resources we provide, to stimulate creativity, spark new knowledge and encourage scholarship to flourish.

We will develop a comprehensive digital library experience for the University's off campus users.

Library towards 2020 - strategic plan <u>available here</u>

Digital seems to be the common denominator but…

is the digital/technology hype real?

Gartner Hype Cycle - 2010

Gesture Recognition

Microblogging

3D Flat panel TVs and displays

Social Analytics

Private cloud computing

Media tablet

Biometric authentication methods

Virtual assistants

Cloud Computing

Ebook readers

3D Printing

Wireless charging

Augmented Reality

Location aware applications

Mobile application stores

All elements are less than 5 year realisation time.

Gartner Hype Cycle - 2017

Serverless PaaS

Augmented Data Discovery

Edge Computing

IoT platform

Software defined security

Deep Learning

Machine Learning

Drones

Cognitive Expert Advisors

Virtual Reality

All elements are less than 5 year realisation time.

Let's add data to the mix

2010

5.2 billion internet connected devices

0.9 Zettabytes

Content is king

Academic Leadership

2017

28.4 billion internet connected devices

17 Zettabytes

Context is kingdom

Academic (with elements of Digital) Leadership

2025

80 -100 billion internet connected devices

180 Zettabytes

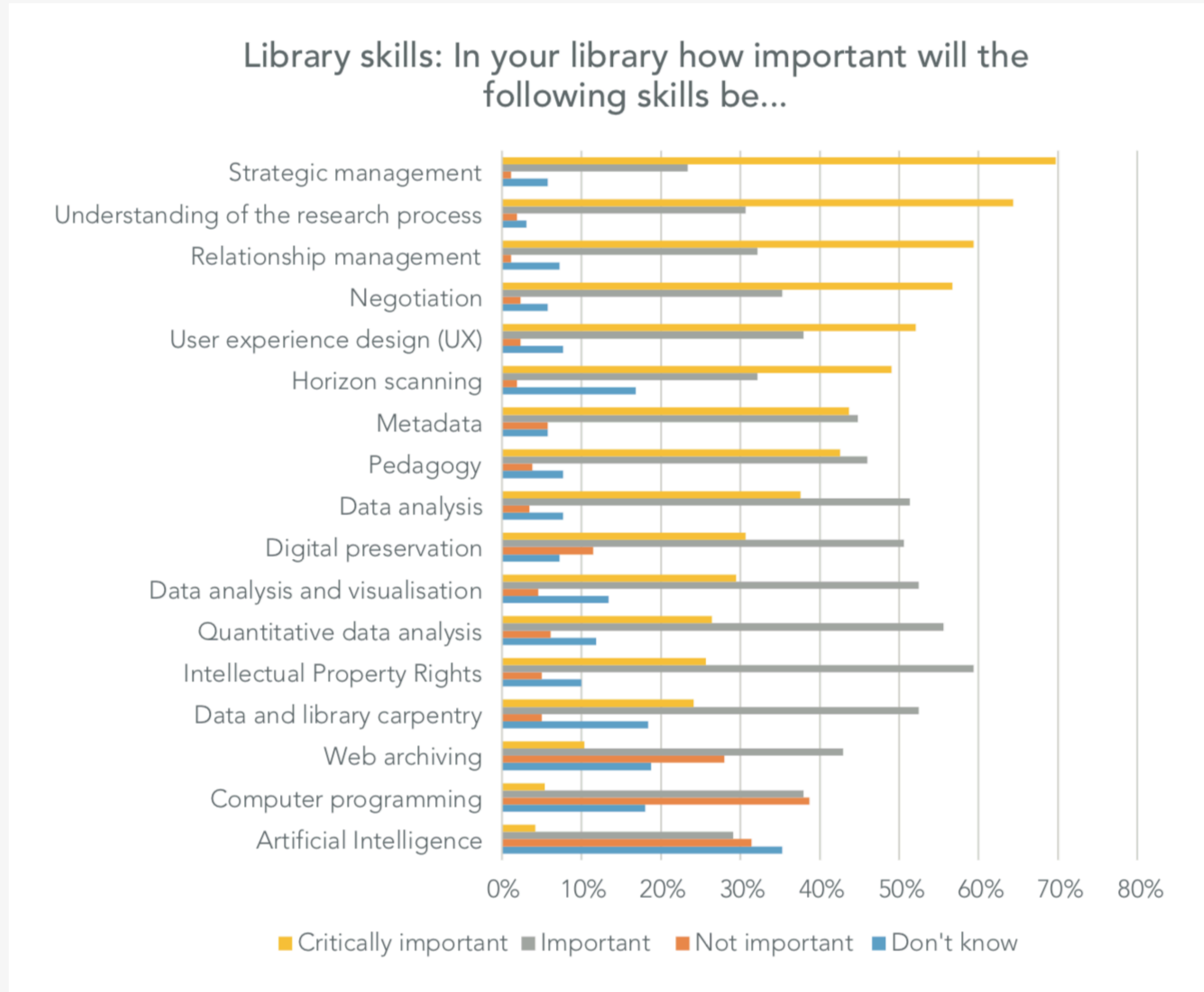Cognitive load reduction & context brokering

Digital Leadership*

* but not on its own

The scale and pace of change is mind-boggling
Do our staff have the relevant digital skills to cope?

Bridging the Gap of Digital Skills

SCONUL report - Library skills importance

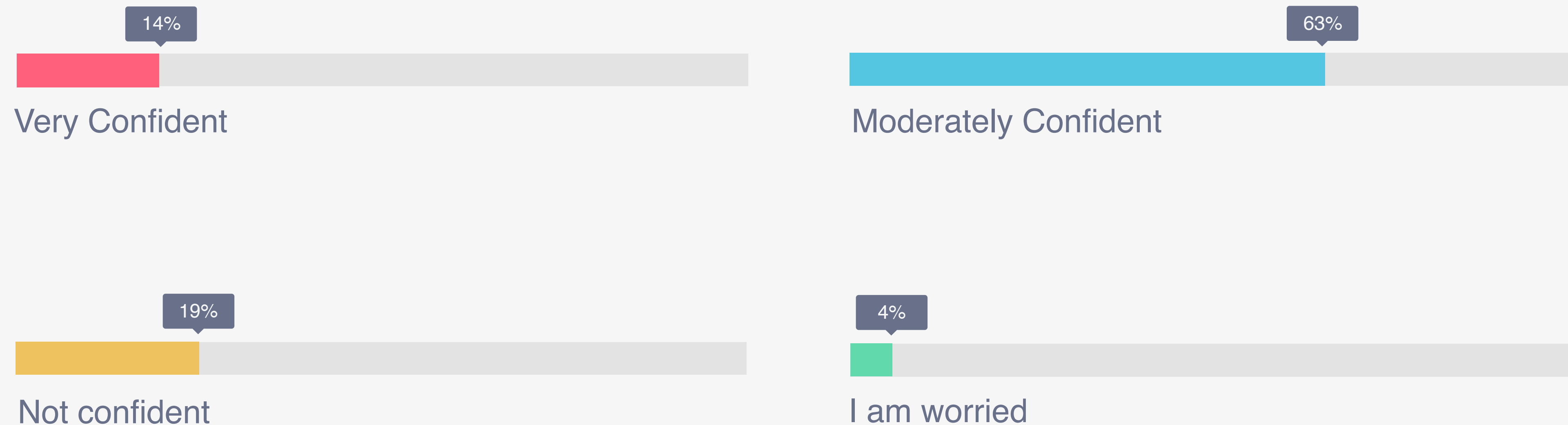Library skills: In your library how important will the following skills be...

Demographics
18-25 - 1%
26-35 - 14%
36-45 - 26%
46-55 - 38%
55-65 - 19%
65+ - 0%
Prefer not to say - 1%

SCONUL Report - Mapping the Future of Academic Libraries available here

Survey results (1/3)

How confident are you that you have the skills that would be relevant to the needs of research libraries in 2025?

14%

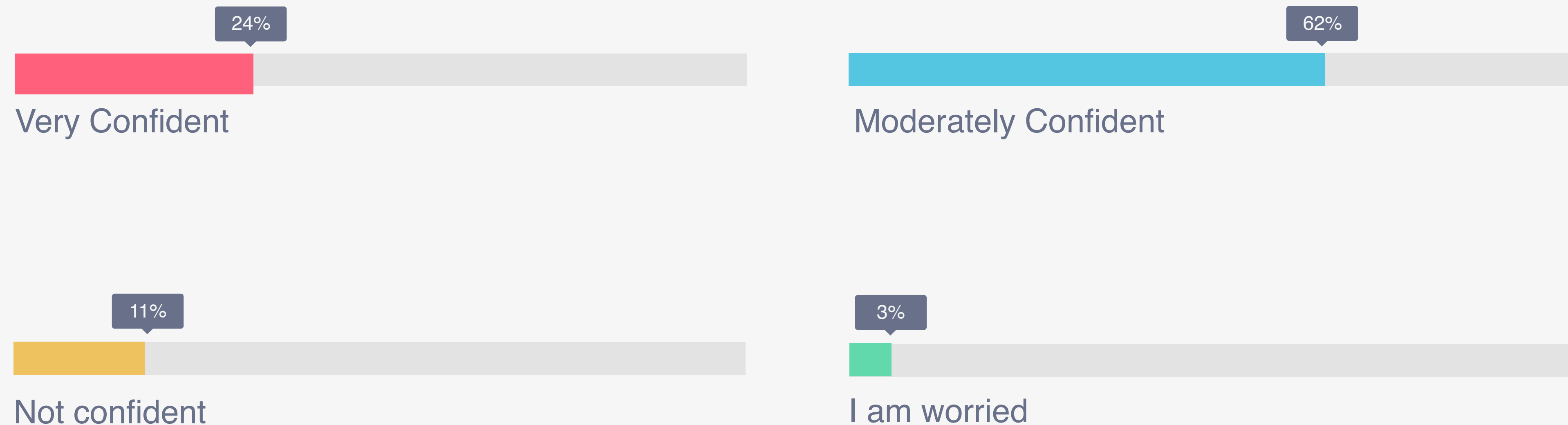Very Confident

63%

Moderately Confident

19%

Not confident

4%

I am worried

Dataset from survey - staff readiness in research libraries for a technological future
Available at: http://dx.doi.org/10.17635/lancaster/researchdata/141

Survey results (2/3)

How confident are you to be able to cope with technological changes that would be coming our way by 2025?

24%

Very Confident

62%

Moderately Confident

11%

Not confident

3%

I am worried

Dataset from survey - staff readiness in research libraries for a technological future
Available at: http://dx.doi.org/10.17635/lancaster/researchdata/141

Survey results (3/3)

In your own view, do you think that you can learn new technologies quickly?
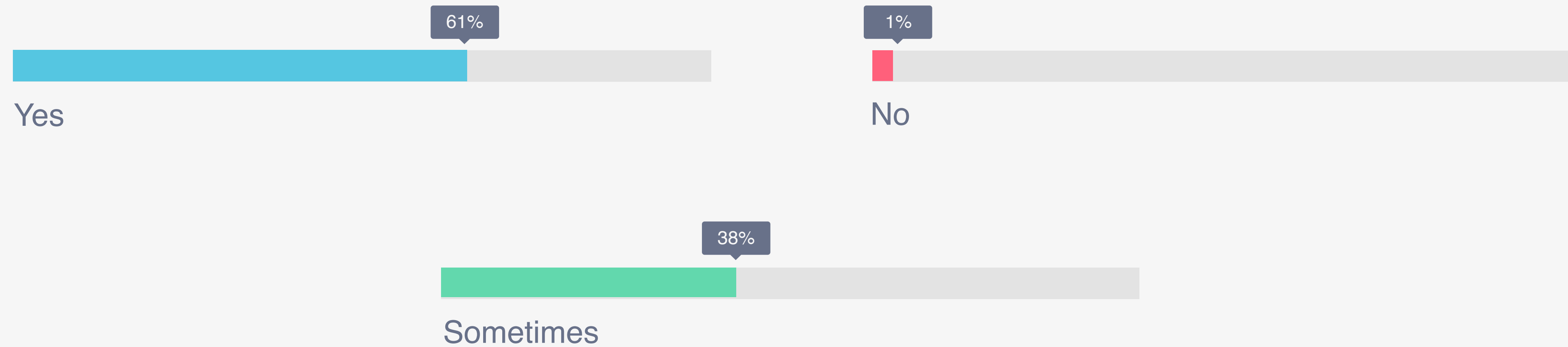
61%

Yes

1%

No

38%

Sometimes

Dataset from survey - staff readiness in research libraries for a technological future
Available at: http://dx.doi.org/10.17635/lancaster/researchdata/141

Are we really ready or is this an example of dunning-kruger effect?

Digital Skills Development

Digital Leadership 01

02 **Confidence Building**

Digital Skills and Code Clubs 03

04 **Micro-Learning**

Libraries as incubators of scholarly development

Mapping the Future of Academic Libraries

Carry out investigation and development of services in the areas of artificial intelligence, machine learning, internet of things, digital humanities, and other areas of datafied scholarship

Investigate the possibilities of developing collaborations to create meaningful online scholarly venues to complement library physical spaces.

Future of Libraries

… that MIT establish an Initiative for Research in Information Science and Scholarly Communication, based in the MIT Libraries, to enable ==bold experimentation== and to serve as a hub for best-in-class research on the great challenges in information science and scholarly communication.

…the Libraries should generate open, interoperable content platforms that explore ==new ways== of producing, using, sharing, and preserving knowledge and that promote ==revolutionary new methodologies== for the discovery and organization of information, people, ideas, and networks.

MIT - Future of Libraries - Preliminary report <u>available here</u>

Risk and Innovation

Take (calculated) risks and accept failure as a learning endeavour

Students are digital natives. They learn and work in different ways *

Promote more student-led innovation

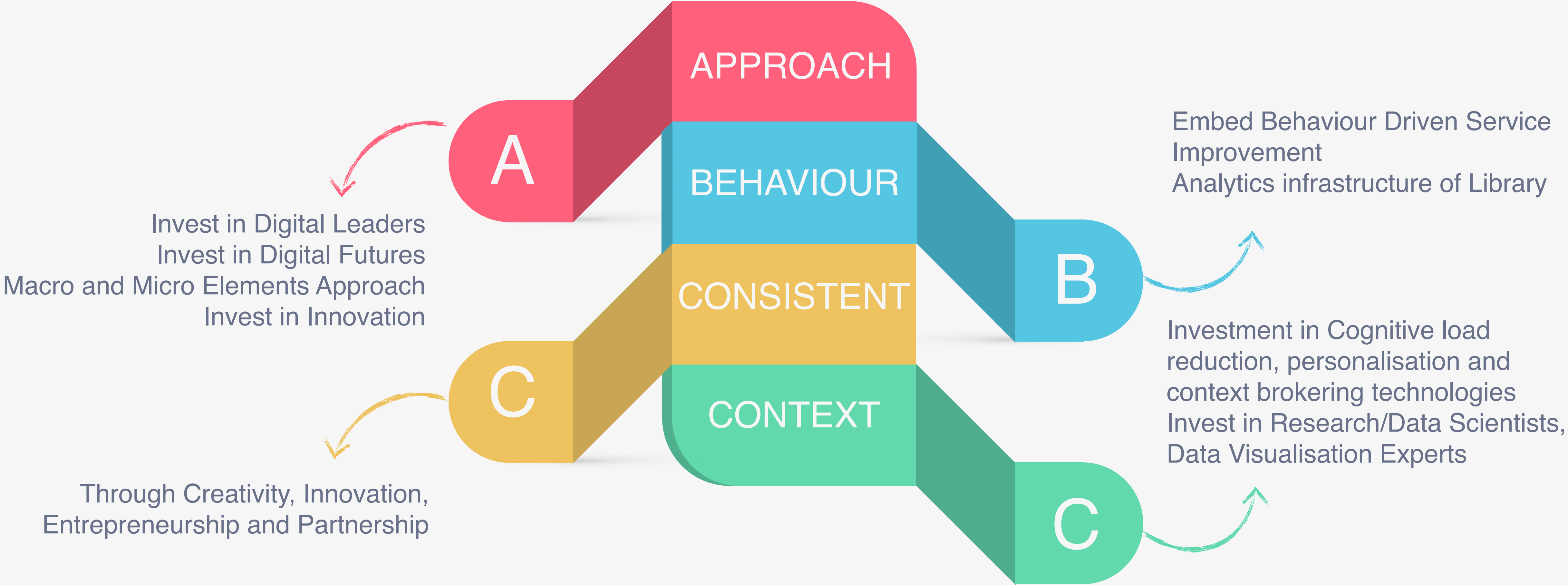*bold experimentation, new ways, revolutionary new methodologies*

Potential of AI, Machine Learning, Blockchain, Mixed Reality

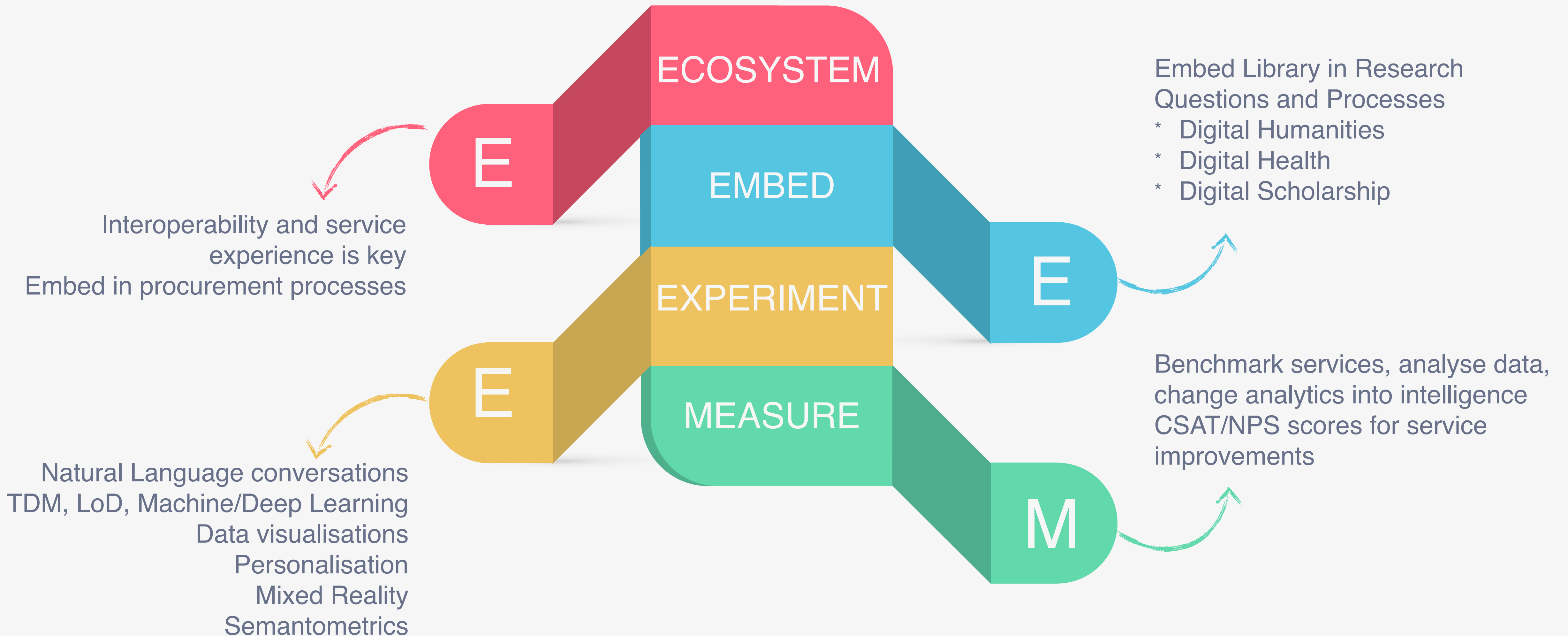* Counter argument available here

Tackling the challenges

Tackling the challenges (1/2)

APPROACH

A

Invest in Digital Leaders
Invest in Digital Futures
Macro and Micro Elements Approach
Invest in Innovation

BEHAVIOUR

Embed Behaviour Driven Service Improvement
Analytics infrastructure of Library

B

CONSISTENT

C

Through Creativity, Innovation, Entrepreneurship and Partnership

CONTEXT

Investment in Cognitive load reduction, personalisation and context brokering technologies
Invest in Research/Data Scientists, Data Visualisation Experts

C

Tackling the challenges (2/2)

E ECOSYSTEM

E EMBED

E EXPERIMENT

M MEASURE

Interoperability and service
experience is key
Embed in procurement processes

Natural Language conversations
TDM, LoD, Machine/Deep Learning
Data visualisations
Personalisation
Mixed Reality
Semantometrics

Embed Library in Research
Questions and Processes
*   Digital Humanities
*   Digital Health
*   Digital Scholarship

Benchmark services, analyse data,
change analytics into intelligence
CSAT/NPS scores for service
improvements

From Analytics to Intelligence

The Data to Information journey for smart decisions

Analytics

Context

Intelligence

Behaviours

A

C

B

I

@mkhokhar

36
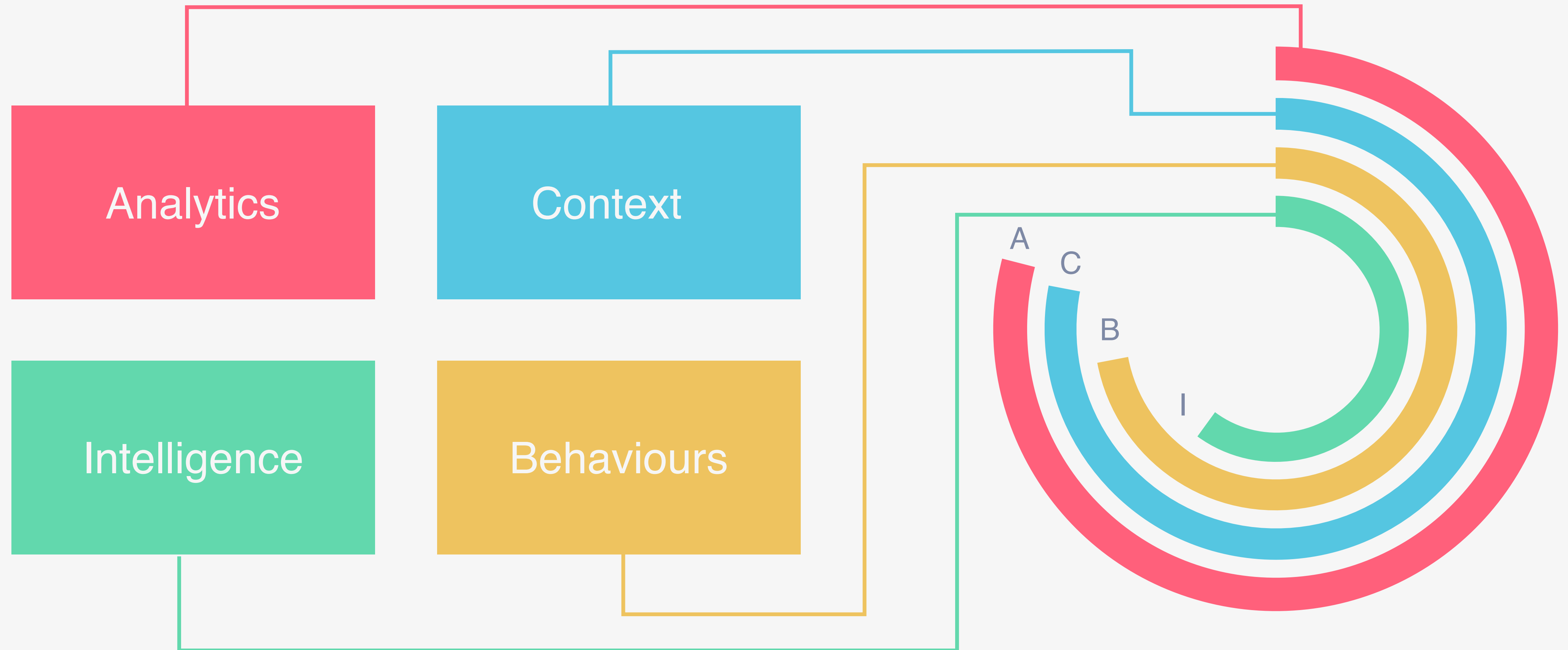
Digital Futures

S — Study space occupancy

J — UX and Library Journeys

M — Mixed Reality

T — Natural Language Touch points
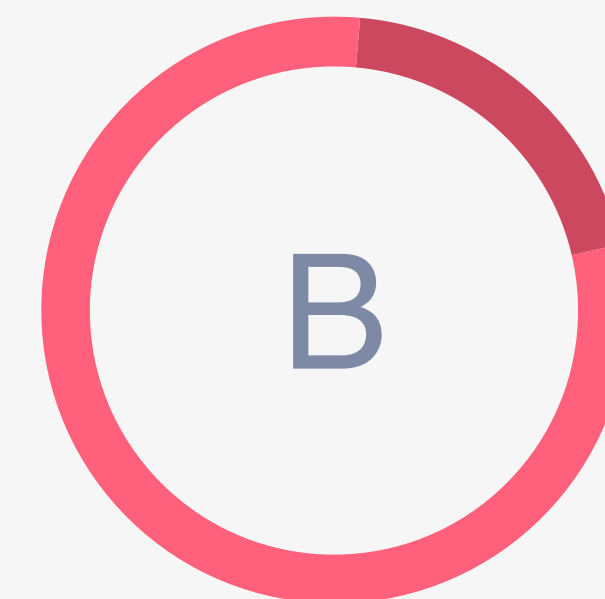
G — Gesture Control

M — Mood aware spaces

P — Personalisation

B — Blockchain

Areas of investment for scholarly development

Smart data discovery approaches

Intelligent digital humanities

Text and data mining for machine learning

Personalised services for cognitive load reduction

*Enabling global digital citizenship **

*Mixed Reality ****

* Becoming a Digital Citizen: an introduction to the digital society - <u>available here</u>
** Mixed Reality and Library Spaces - Lancaster University - NoWAL - <u>available here</u>

Global challenges

These developments are not limited to UK, Australia or another country

We face global sectoral challenges, some of them are wicked in their nature

We may not be able to solve all problems, but we can make significant progress towards that

We need to develop partnerships for innovation in libraries

Library as a *service-provider*, **partner** and **leader**

"There is no turning back from digital in HE. The digital demand is real, and HE institutions must start making the grade or risk irrelevance in the digital era." *

The question is not of an if but of when!

Thank you for listening. Questions?

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