

DATA LEADERS WHO'S WHO

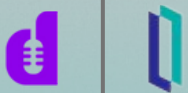
DRIVING INNOVATION WITH DATA

Featured in this week's interview

Craig Napier

Chief Data Officer

University of Technology Sydney (UTS)



TECHNOLOGY

Editors note

Data has become the core of how we operate as a society, and is central to business success. Data-driven businesses are finding new ways to compete by letting their data uncover unique points of differentiation. The value of data can't be overstated; it has been referred to as the new currency. We are proud to bring you the latest Data Leader's Who's Who and support the increasingly critical role that these emerging and established data leaders play both now and into the future.

The insights these leaders provide will be pivotal in strengthening the position of data in the business community and we thank them for sharing their valuable experiences.

Andrew Aho, Regional Director Data Platforms, InterSystems | Felipe Flores, Founder, Data Futurology

INNOVATION AT UTS



Craig Napier

Chief Data Officer

University of Technology Sydney (UTS)

Craig Napier is the Chief Data Officer at the University of Technology Sydney and is developing and collaboratively advancing a whole-of-institution approach to using data to drive evidence-based decisions. Craig has in excess of 20 years' experience in data intensive environments both domestically and internationally and 15 years as a data and analytics executive in the higher education sector, and is well known for his collaborative approach. Craig was recognised by the Institute of Analytics Professionals of Australia (IAPA) as among the Top 3 Analytics Leaders in Australia in 2020.

Craig is currently President of Transforming Data With Intelligence (TDWI); and former Chair of the Australasian Association for International Research (AAIR)'s Business Intelligence, Data Warehousing and Analytics Special Interest Group. He holds a Master of Business Administration (UOW), Bachelor of Business (Accounting) (UWS) and is a Fellow Certified Practising Accountant (FCPA).

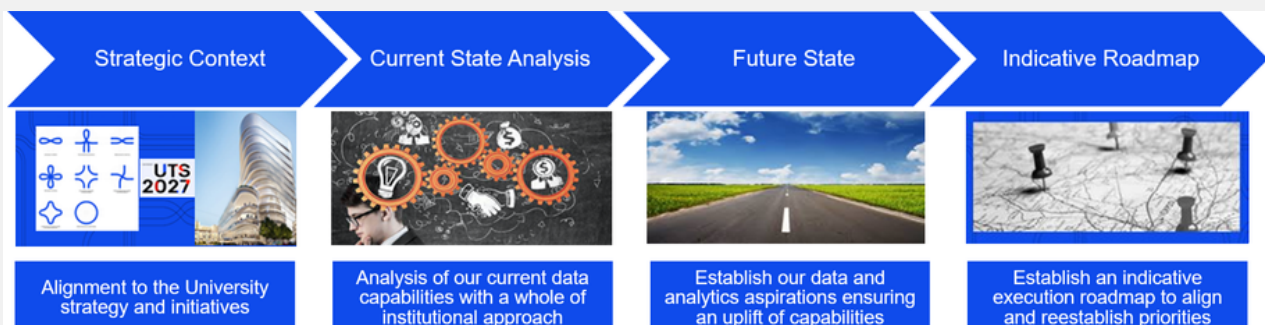
CRAIG SHARES HIS DATA JOURNEY

I have always had an interest in data and statistics and started my career in accounting; I thought it would suit my skills and areas of interest. Whilst my financial, management and systems accounting roles gave me a strong transferable range of skills, something was missing, I was frustrated by how the systems were designed to get data in with little focus on how the data can be used to visualise and tell a story that could drive business outcomes. It was at this time, having good systems skills, I decided to focus more on developing my skills in reporting visualisation and data warehousing. I was curious and the move to analytics provided me with the sense of adventure, the ability to explore and develop new things in an area that I was passionate about. As I look back 20 years, we are seeing and will continue to see the importance of data and analytics in driving evidence-based decisions, and it becoming an essential skill that all people should possess whatever career they choose to pursue.

STRATEGY & LEADERSHIP

How do you devise a data strategy? What sets apart the good from the bad?

A data strategy, like any strategy, is about how you move from where you are to where you want to be. Having developed a number of data strategies it is critically important to understand the environment in which you operate.



Having recently completed the UTS data strategy, I have found that one of the most important aspects is about understanding your current state and taking the time to talk to a variety of stakeholders across all parts of the business to uncover the challenges, opportunities and also to recognise what is working well.

I firmly believe that those who will have an ownership in its execution often are the best ones to develop a strategy. Otherwise, there is a risk that a strategy becomes an artefact that is only spoken about for what it did not deliver. The increasing importance of data requires the strategy to be a living, breathing document, a roadmap that guides the direction for your organisation and is responsive and adaptive to the changing environment. All without losing sight of where you need to be.

There is often a tendency when commencing a data strategy to be too aspirational, and to seek to invest in technology or major transformations without the foundational capabilities to execute and scale. This inevitably leads to falling painfully short of those aspirations.

Whilst there are many challenges, applicable across all industries, your areas of focus may be very different. At UTS our focus was on building capability within the team, ensuring we had the technology that would support the services required by the business and establishing and structuring a team designed to efficiently deliver the new and existing services.

What are the essential qualities of a data leader?

I have been very fortunate to work with, and for, a number of inspirational and talented leaders over my career that has spanned over 20 years, in data intensive environments.



UTS Data Arena
Photo by Joanne Saad



"THE INCREASING IMPORTANCE OF DATA REQUIRES THE STRATEGY TO BE A LIVING, BREATHING DOCUMENT, A ROADMAP THAT GUIDES THE DIRECTION FOR YOUR ORGANISATION AND IS RESPONSIVE AND ADAPTIVE TO THE CHANGING ENVIRONMENT."

There are some common traits and characteristics in these leaders that have enabled me to get to where I am today.

These include:

- respecting and having confidence in your ability
- empowering you to make decisions
- encouraging curiosity and innovation and a willingness to explore
- supporting, developing and investing in their team
- advocating and sharing in your successes; and
- challenging you to develop yourself.

Additionally, a data leader should also:

- display an excellent understanding of the business and desired outcomes
- have strong skills and knowledge of data and analytics technology
- have passion for developing, building and empowering data and analytics teams to transform the way we work
- be a visionary that links the technology, people and processes with business outcomes.

A data leader will push you out of your comfort zone, support and encourage curiosity and provide opportunities to enhance your skills in the emerging technologies that support and drive innovation.

What work are you most proud of? (We'd love to hear about your use cases!)

There are numerous things that I have been proud of throughout the last 15 years in the higher education sector and possibly too many to include here. One common ingredient to these successes is the amazingly talented people that I have been fortunate to work with, that have made an enormous contribution.

One of my key passions is the ability to share and build knowledge and this is probably why I enjoy the higher education sector and working at UTS. Together we have built an amazingly talented team that thrives on curiosity, a willingness to help others and have developed skills in emerging technologies.

It is the provision of these opportunities for staff at UTS that I enjoy and to see the growth of team members, the ideas they come up with and the potential for what they will become.

This may be sharing a little bit too much about myself here, but early in my career I found I had numerous good ideas, but struggled to get them off the ground- perhaps through a fear of failure or a lack of time. I knew this needed to change. I explored graph technology back in 2013 and was encouraged, empowered and supported to innovate with it. I created a social relationship network of our research collaborations that showed the strength and connectedness of our networks and partnerships. This innovation provided rich, previously undiscovered insights into the strength of our partnerships and enabled the ability to simulate risk-based scenarios in the event staff left, to understand the impact on the University. Fast forward to today and we are seeing the increasing prevalence of this technology and use cases, which continue to grow every day.

Another success of which I'm proud is having evolved, aligned and delivered an operating model that has empowered the broader data and analytics community to generate faster insights with Power BI. The self-service capability has been adopted by 48% of our professional staff over the last 12 months, has delivered efficiency and eliminated time in the manual preparation of reports. The collaboration and willingness to share knowledge, experiences and expertise on the use of Power BI has seen the community grow, enabling the development of new skills across the University.

These personal accolades are not just a reflection on myself, but on the great work of the teams which I have led. I was extremely proud to be recognised among the [Top 3 Analytics leaders in Australia by the Institute of Analytics Professional of Australia in 2020.](#) The transformational work has provided some enormous value and uplift in capability, which was only possible from the expertise and willingness of the teams to deliver these solutions.



MATURING YOUR DATA CAPABILITY

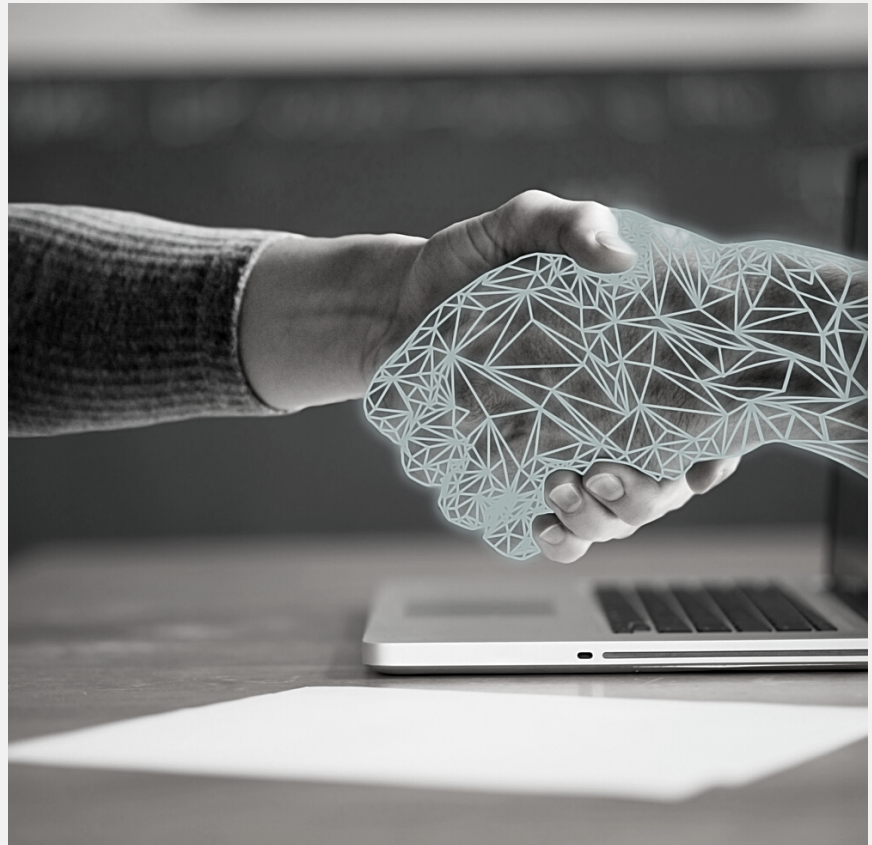
What have you found to be the key ingredients to making data analytics capability create an impact on business outcomes?

Our people are the key - I have an amazingly talented team that are focussed on building a positive community. They possess not only the technical skills but also display a genuine curiosity, a willingness to explore and a rich contextual understanding of the potential of data beyond a single data domain.

We know that data and analytics roles are in high demand and the Data Analytics and AI community is struggling to find talent. It is my strong belief that the talent exists within your organisation now, as it does at UTS. A focus on retention of talent is of the utmost importance and this entails:

- providing the opportunities for people to develop the data skills necessary to allow them to grow
- generating time, capacity and space for innovation
- encouraging and driving opportunities for collaboration
- developing and driving strong data foundation that provide the basis for self service, and
- building relationships with your team and within the organisation.

I am also in an enviable position to be surrounded at UTS with some of the most gifted academic and professional staff in the areas of business analytics, data science artificial intelligence and machine learning, as well as the wealth of emerging student talent who will be our next data and analytics leaders. UTS provides a range of short courses that enable you to build the required skills in your data and analytics team, these resources have provided enormous value in developing the next wave of data and analytics talent.



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How do you build an effective analytics organisation?

An ability to understand which types of services, and how best those services are delivered, are crucial first steps. **Form follows function**, meaning that it is essential to understand the services that the business requires and then develop an organisation that is best placed to deliver on the services. To do otherwise would be to consider change for change's sake and would not deliver the required outcomes.

AT UTS, the data strategy had identified a number of data challenges and opportunities to enhance and deliver a new range of services for the University.

Some of these roles were across all parts of the university and by organising the team based on where the services are best delivered and to ensure a close connection with the business the Data Analytics and Insights Unit was formed that focussed on:

- data management services
- analytics and AI, and
- performance evaluation.

Building an analytic organisation is very rewarding and something I enjoy, having built a number of teams and new capabilities. In all of these engagements, a strong focus has been on people and a need to establish data and analytics as a core capability in your organisation.

The ability to understand the services required will assist you in shifting annual project funding to embedding data and analytics into your organisation's DNA, creating the flexibility, adaptability and responsiveness to leverage and harness the value of data on emerging opportunities and the mitigation of threats.

AI PROJECTS, PRIORITISATION AND PRODUCTIONISING

What are some of the lessons learned you've encountered when getting AI products into production? Operationalising AI. How do you deliver AI at scale and get more models into production?

The ability to operationalise AI is, and has been, a challenge and whilst not there yet, it is a key continuing focus. A significant part of our work relates to ensuring we have the capability (people, processes and technology) in place that can ensure we are able to develop and deliver AI at scale.

There are a few key factors that influence productionisation and the ongoing management of AI models in production:

- single points of failure – limited resources affect the ability to both develop new models and support existing ones. These key resources thrive on developing new models and often find that models developed are unsupported and lose value over time due to data drift and thus become obsolete. These AI models are much like trying to acquire new customers at the expense of your existing customers, and the reverse is not optimal either. A focus on both your new and existing models is required and with limited resources poses a challenge as you scale your AI initiatives.

- a preferred coding language - data scientists have a tool or coding preference and given high demand for data science resources, when staff leave or new staff commence they come with a preferred coding language and struggle to understand the code and attempt to rewrite, taking valuable time away from other initiatives.
- pilots and an inability to scale – pilots do deliver some insights and value but struggle in their ability to scale. Pilots are often developed based on a specific problem in mind and not in consideration of how it will work, then cannot scale and thus need to be reworked, taking significant time and lost opportunity.

To overcome these problems, we have invested in an artificial intelligence and machine learning platform. The platform, DataRobot, will provide the ability to operationalise and manage our DataOps pipelines to ensure we move rapidly from development to production. This platform will also support a team approach that reduces the

reliance on a single person, or the need to understand a specific language, and ensures our AI models remain current and of value to the broader community.

To operationalise AI, we are establishing a central AI capability, but are considering how this will roll out and be embedded across the University. This approach will ensure we have the people with the skills, the process to guide the way we work and can mitigate the ethical implications of AI in a considered, principles-based approach.

Buoyed by the establishment of self-service reporting, visualisation and analysis and the establishment of our data governance foundations, we have enabled the team to develop new skills and uplift our AIML capability at UTS.

What new technology and innovations do you see as being the most critical to the industry over the next 18 months?

There is a lot of tech out there. As I look back over the last 20 years the same challenges exist whether you are developing a reporting capability, a business intelligence strategy, analytics and now AI -



the challenges remain very similar. Technologies will come and go and the technology landscape is becoming more complex and nuanced, which is likely to continue.

Over the last two years, we have witnessed significant transformation and an explosion of data and organisations now require more timely access to actionable intelligence given the disruption to existing business models. Data is at the centre as business models change, we will see a continued and increasing focus on real-time streaming tools, intelligence automation, decision intelligence aimed at improving efficiencies, development of new revenue sources and improved time to value.

The technologies that will enable this should be considered as a part of your AI and automation

platforms and ensure these emerging tools interoperate to form a robust plug and play architecture that is responsive to business needs.

How do you ensure you are leveraging new tech for innovation, rather than tech for tech's sake?

There is a real balance needed and, in my view, not all innovation is dependent on technology. Those organisations that have a willingness to explore and innovate, like UTS, can apply technology to emerging business challenges and opportunities. If we wait for the business to be ready and it takes six months to embed the technology, the opportunity may be lost. The real strength is to understand the business and in ensuring the technology and capabilities you have today will be in place to support the organisation of tomorrow.

How do you determine which projects to use AI for and how do you prioritise your projects?

We have developed a robust prioritisation framework for our BI initiatives. The simplicity of this has and will be the basis for how we prioritise our AI initiatives moving forward. We have adopted a two by two matrix that captures a range of indicators on business value and feasibility to determine a relative score. These initiatives are then ranked and considered to ensure we are focussing on the right projects with the agreed business outcomes. A dedicated Board will focus on these priorities to ensure resources are allocated effectively, guided by ethical principles and are considering the risk and potential unintended consequences associated with the Implementation of AI models.

What legacy do you hope to leave behind you at your organisation?

I am and have been very fortunate to be working at UTS, an organisation that is the leading technology university in Australia, and is well known for being innovative, creative and practical. Our foundation and the work we have done over the last 24 months has developed a wealth of new capabilities, knowledge and experience not only in my team but extended across all parts of the University. I believe that as a leader it is my responsibility to develop the next wave of analytical leaders, with not just an understanding of current technologies, but the capabilities, courage and curiosity to consider the endless possibilities for the application of data analytics and AI initiatives in an ever-changing environment.

I would like my legacy to be that the value of data is understood and used to inform our decision making to deliver value that is sustainable within the organisation and in the communities in which we operate.



LEARN MORE ABOUT THE UNIVERSITY OF TECHNOLOGY SYDNEY (UTS)



UTS is a dynamic and innovative university in the heart of Sydney's creative and digital precinct, at the southern gateway to Sydney's central business district. UTS is Australia's leading university of technology and is recognised as the number one young university in Australia.

UTS is building on its enviable reputation for combining innovation, creativity and technology, and is committed to supporting positive social change within and beyond its campus.

Integral to the delivery of the UTS strategic plan, the Chief Data Officer role was established in recognition of the fact that data and analytics play an increasingly important role in the higher education sector. Whilst the University continues to grow and develop excellent teaching and research, it is important it simultaneously develops a strong data foundation, that brings a whole-of-institution approach to how internal and external data is captured, managed, shared and used across research, teaching and learning and the operations of the University.



Building 2, UTS Central Broadway
Photo by Andy Roberts

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RATING

2021-2024 QS star rating

133rd

RANKED UNIVERSITY IN THE WORLD

2022 World University Ranking

15th

IN THE WORLD FOR OVERALL CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT

2022 THE Impact Rankings

2nd

IN THE WORLD FOR CLEAN WATER AND SANITATION

2022 THE Impact Rankings

3rd

IN THE WORLD FOR RESPONSIBLE CONSUMPTION AND PRODUCTION

2022 THE Impact Rankings

#1

HIGHEST-PERFORMING UNIVERSITY IN AUSTRALIA UNDER 50 YEARS OLD

QS Top 50 Under 50 2021 and The Young University Rankings 2022