
Vision, Leadership, Innovation, Collaboration, Execution, Impact

- **Defines and executes visionary strategies** – Creates innovative visions for applying data and technology in the public and private sectors. Delivering Smart City strategies for some of the largest developments in the UK, Europe and the Middle East, representing £billions of investment. Built Amey's £32m innovation programme from scratch to secure savings and investment worth 2% of profits in 18 months. Defined strategy and oversaw solutions for IBM's £150m UK Smart Cities business.
- **Delivers first-of-a-kind outcomes** – Uses expertise in transport, technology, science, business, engineering, urban systems, economic development, finance, media and government to create financial and outcomes-based business cases for exploiting emerging data and technology to deliver several £100m of financial returns or significant social outcomes. Delivers solutions to implement them for organisations from multi-£billion corporations to local authorities, startups and social enterprises.
- **Inspires and collaborates across boundaries** – Inspires, coaches and collaborates with businesses, academics, governments, communities, entrepreneurs and social enterprises across the world. Writes <http://theurbantechnologist.com/> with thousands of readers from over 180 countries. Regularly invited to speak and write internationally by institutions such as the World Bank, United Nations, European Investment Bank, Eurocities, New Civil Engineer, national and local Government and industry bodies. Founded Birmingham's Smart City Alliance, a non-commercial collaboration of 50 city institutions.

Expertise

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| ▪ Executive people, financial and business management | ▪ Big data, analytics, scientific computing and statistical analysis | ▪ Delivering impact and value from open innovation |
| ▪ Defining and executing strategy | ▪ Smart Cities and the Internet of Things | ▪ Multi-organisational collaboration |
| ▪ Organisational design and capability building | ▪ Social media, 5G and mobile devices | ▪ Startup incubation and mentoring |
| ▪ Business Development and Sales | ▪ Virtual / Augmented Reality | ▪ Digital urban design |
| ▪ Coaching and mentoring | ▪ Robotics and Artificial Intelligence | ▪ Enterprise architecture, and systems integration |
| ▪ Negotiation | ▪ Wearable technology | ▪ Agile project delivery, DevOps and Cloud computing |
| ▪ Project delivery and turnaround | | |
| ▪ Consultancy | | |
| ▪ Written and verbal communication | | |

Experience

Digital Property and Cities Leader UK, Middle East and Africa, Arup

November 2017 – Present

- Responsible for business development, work winning and project delivery for an £8.5m business, with profit and loss accountability. Grew the business 15% in the first year. Developed new consultancy services and client relationships for smart buildings and digital masterplanning.
- Delivering digital strategies for some of the largest developers and developments in the UK, Europe and Middle East, including the Gilson Park Estate (UK), Bruntwood (UK), South Sabah Al Ahmad (Kuwait) and the Milan Innovation District (Italy), representing £billions in investment. These will lead to large-scale operational deployments of Smart Building and Smart City technology and services, delivering major organisational, economic, social and environmental benefits as well as return on investment.
- Developed the business case and go-to-market strategy for Arup's "Property Insights" platform for the application of real-time data and analytics to built environment scenarios. The platform is now in development as Arup's second data platform product with early projects underway at major clients.

Director of Technology, Amey

January 2015 – November 2017

- Reporting to the CIO, delivered technology solutions for infrastructure managed by Amey's £2.2b business and used by 1 in 4 of the UK population daily. Accountable for profit and loss on a £7m operational budget and for delivery of a £30m project portfolio. Re-engineered governance, finance, project management and talent processes to transform performance and morale of a 70-strong team. Defined and procured a new company-wide Cloud platform to support Agile and DevOps delivery.
- Built an open innovation programme of 40 projects with multi-£million annual profit improvements and social, economic and environmental benefits, and which led to Amey's role in the West Midlands CAV testbed. Secured £32m external

funds through collaborations with world-class Universities, innovation agencies and technology partners. Amey's Executive Committee valued this programme so highly that it was retained with no cuts to personnel or budgets through a period in which the company lost over £200m in a single quarter and in which 2,000 redundancies were made.

Non-Executive Director, Innovation Birmingham

December 2013 – April 2018

- Non-Executive Director and mentor for Birmingham's main technology start-up incubator. Advised the Board on investment strategy, risk management and technology trends through a successful doubling in size of the facility and subsequent acquisition by Bruntwood SciTech.

Founder and Chair, Birmingham Smart City Alliance

April 2013 – Present

- Formed the Birmingham Smart City Alliance with agreement of Directors and Chief Executives of IBM, SCC, Innovation Birmingham and Millennium Point. The Alliance supports innovative projects using technology to create social, economic and environmental improvements in the city. The Alliance now boasts 50 members, has secured £millions in funding, and has supported the formation and growth of initiatives such as Slenky's West Midlands Hub, which helps disconnected teenagers find employment, and the Harborne Food School, which has received international awards for its work to tackle issues such as childhood obesity and diabetes.

Executive Architect, Smarter Cities, IBM UK

June 2009 – December 2014

- Responsible for business development, technical strategy and solutions for a £150m business, acting as a trusted advisor to CEOs, CIOs and innovation leaders. Appointed to the UK Government's Smart Cities Forum. Led IBM's most significant commercial Smart Cities projects in the UK. Defined the business case for the "Defence Operations Platform" product with a £150m worldwide sales pipeline.

Social Media and Big Data Leader, IBM Software Group Europe

June 2007 – May 2009

- Led first-of-a-kind social media, mobile and big data projects worth over £20m for European clients that were used as IBM case studies for clients and industry analysts around the world. Defined requirements for technical features and standards compliance that were implemented across IBM hardware and software products with multi-\$10billions of revenue globally.

IBM European IT Architecture Services Consultant and Manager

March 1997 - May 2007

- Responsible for business performance of a team of senior IT architecture consultants in leadership roles on major projects worth several £10 millions in Europe, Middle East and Africa. Revived the business by building new sales channels, operations processes and vitality initiatives.
- Delivered IT solutions worth several £10 millions, including some of IBM's first commercial internet, mobile and web service applications, and the web application infrastructure for a £500m programme for a top 5 global bank. Turned around failing projects with budgets of several £100 millions. Created IBM's definition of Service Oriented Architecture used as a global marketing drive for 2 years.

Education and Additional Appointments

- BCS Fellow and Chartered IT Professional (2014). Fellow of the RSA (2013). Academician of the Academy of Urbanism (2012).
- Member of UK 5G Steering Group (2018). Member of Birmingham City Council Smart City Commission (2012). Advisory Board member for Bruntwood SciTech Birmingham (2018), Innovation West Midlands (2016), Department for BEIS (2013), DfID (2012), Aston University (2012), University of Birmingham (2010), University of Warwick (2009), British Standards Institute Smart Cities Programme (2009). Honorary Fellow University of Warwick (2009).
- Appointed to the IBM Academy of Technology (<https://www.ibm.com/blogs/academy-of-technology/>) (2014). IBM certifications in Leadership, Management, and IT Architecture 1997-2012 leading to Open Group Distinguished Certified IT Architect status (2012).
- PhD in Physics (1998), University of Birmingham, for the application of microwave engineering and statistical computing techniques to superconducting electronic devices and magnetometers.
- 1st class BSc in Physics (1993), University of Birmingham.
- A Levels in Maths (A), Physics (A), Chemistry (B) and Further Maths (D).
- 9 O Levels, 8 at A grade, including English (A), Maths (A), and A/O Level Additional Maths (A).
- Chair of the Committee of Trustees, Kings Heath Primary School PTFA, a registered Charity (2018).