

EA's Global 23	Digital Strategy	Recent digital-driven developments (inc. M&A, innovation, partnerships and key hires) [2016-2018]
AECOM	Through its Digital by Design strategy, Aecom is aiming to 'leverage technology to deliver services to clients'; for example, the use of drones to perform environmental studies and inspect sites such as nuclear plants or robotics for environmental cleanup, and to aid fire and safety. The strategy also includes the establishment of robust IT governance processes and policies to ensure consistency and standards across all the global group's operations, clients and projects	Partnership with IBM to develop an updated 'disaster resilience scorecard' on behalf of the United Nations Office for Disaster Risk Reduction
ANTEA Group	Antea Group described 2016 as a 'year of diversification' with expansion into new areas including e-sensing and data and a 'sharpened focus on innovation'. Firm claims to be increasingly focusing on R&D and innovation in response to technology and customer demands, including the use of augmented reality for auditing and drones for site assessments	Partnering with global technology companies, in both the hardware and software sectors, to provide 'actionable EHS and sustainability strategies aimed at efficiently assessing and mitigating risk exposure, and protecting your brand while still being practical, flexible and fit-for-purpose'
Arcadis	<i>Innovation through digitalisation</i> is a stated strategic priority, with the focus on scaling existing technologies and exploring new technologies as it targets data-driven business models, human-centric digital solutions, and co-creation of new technologies with clients	Acquired EHS software specialist E2 ManageTech and software and analytics specialist SEAMS . Julien Cayet appointed chief digital officer to lead a new multidisciplinary digital team; David Glennon appointed UK head of digital
ATKINS (member of SNC-Lavalin Group)	Atkins is actively investing in 'technology and innovation for growth' with initial investment areas including: digital engineering; intelligent mobility; digital enterprise asset management; and renewables. New Atkins CEO for UK and Europe (following takeover by SNC-L), Philip Hoare, said: "One of my priorities will be to push the digital growth agenda, ensuring we bring smart thinking and technological solutions to the table at this time when our digital and physical worlds are colliding at pace"	Acquisition of Data Transfer Solutions (DTS) by parent company SNC-L, a specialist in asset management and geographic information systems (GIS). Partnership with EAMS Group , specialist asset management company focused in digital transformation, process and technology. Key appointments include: Phil Gruber (ex IBM) as global leader for digital asset management; Adrian Pinder (ex GE) named digital commercial strategy director; and Marc Durand (ex iTech) named director for digital disruption
Cardno	Cardno has established a global technical services unit to actively work on the synergies between multiple digital technologies and their respective experts. It was however forced to divest loss-making assets including US-based XP Solutions, sustainable drainage and flood hazard software business	Actively seeking partnerships with software vendors who develop leading software to ensure 'we have access to the tools we need to expand the capability we can offer clients'.
CH2M	With its <i>engineering on the digital edge</i> , CH2M claims to be using 'next-generation technologies and approaches to revitalise infrastructure, improve watersystems, expand airports and extend rail transit'. Working at the 'epicenter of VR innovation' it is teaming up with developers and testing new products such as Google Cardboard, Samsung Gear VR, Oculus Rift and HTC Vibe	Partnerships including collaboration with Nevada Department of Transportation on use of driverless vehicle technologies
Environmental Resources Management (ERM)	ERM aspires to be a 'digital frontrunner' in the EC sector and has invested heavily in boosting its pre-existing data/technology capability - namely its 100-strong global Information Solutions team - with additional expertise and leadership. CEO Keryn James states: "The intent is to build new sources of revenue that are derived from having digital offerings by taking the knowledge and data that we have within ERM and using it to create valuable insights for our clients." Future focus will be on harnessing technology and data and providing more service innovation	MoU signed with Infosys , global provider of information technology services and digital transformation, to assist on data opportunities; partnership with Cority , Canada-based international provider of environmental, health, safety and quality software (formerly known as Medgate). Appointment of Jim Dyer as head of new digital business
GHD	Launched GHD Advisory in 2016 with a range of services spanning infrastructure investments and economics including digital services, into which Kumar Parakala appointed to new role of global leader - digital. The firm aims to 'combine digital technology with our engineering, architecture and environmental capabilities to create additional value for clients and the community'. GHD CEO Ashley Wright said in 2016: "Digital services are crucial to GHD as we continue to position the business to respond to the technological challenges of 2020 and beyond. Our investment in digital systems underpins our strategic vision of seamless service across our connected global network." The company's executive management group now includes CIO Elizabeth Harper (who was awarded the Gold Disruptor award from the Australian Computer Society in 2015 and who leads GHD's global team of 250 IT professionals)	Acquired VR Space , design visualisation and simulation specialist; Partnered with wind farm developer Neoen on Hornsdale Wind Farm – the largest recently constructed wind farm in Australia where Tesla has installed the world's largest lithium-ion battery

Golder Associates	Golder points to increased use of unmanned aerial vehicles (UAVs) [or drones] generating geotagged images for input into GIS systems and photogrammetry packages which produce 3-D models, for application in major infrastructure and site development work including aerial surveys, underground site work, ground condition monitoring and site mapping. Golder's FracMan software package – originally developed for nuclear repositories 30 years ago – has been adapted for use in the unconventional oil and gas industry	
HDR	Specialising in high-performance buildings and smart infrastructure, HDR underlines its <i>Data-driven design</i> approach - 'an emerging methodology at HDR that connects the built environment to predictive analytics and operational design through computational design.' The firm's Predictive Analytics team offers a proprietary toolkit of data processing tools to help manage and manipulate data	Signs 3-yr agreement with Australian EnviroSuite (formerly Pacific Environment Ltd) for sale and implementation of EnviroSuite (real-time environmental data management and risk forecasting technology) in the US
ICF	ICF sees 'growth opportunities for technology-based solutions involving digital services and strategic communications' across all of its markets; 'rapid changes in technology, including the omnipresent influence of mobile, social, and cloud technologies, also demand new ways of communicating, evaluating and implementing programs, and we are focused on leveraging our expertise in technology to capitalize on those changes'	Acquired Ironworks Consulting , US data services specialist and Olson , digital services provider
Jacobs	Jacobs unveiled Jacobs Connected Enterprise (JCE) in 2017, a suite of integrated capabilities and solutions to enable digital transformation, giving clients 'the capability to connect, protect and analyze operational systems and data'. Jacobs senior VP aerospace and technology, Darren Kraabel, said: "JCE leverages Jacobs' deep domain knowledge to help our clients better manage the challenges involved in true digital transformation, including the expansion of the Internet of Things, OT/IT integration and data analytics. For example, machines, buildings and roads can now be digitally enabled to collect and seamlessly exchange data through wireless networks and cloud infrastructure. Harnessing and understanding this data is a big part of the digitization value proposition and provides an excellent opportunity to enhance performance." It has also invested in a new software platform ION (through acquisition of Apprion), which 'enhances its ability to deliver, extend and manage the Industrial Internet of Things'. Part of the Sustainable Strategies and Solutions unit - housed within JCE - the Digital Solutions function is currently 87 people strong, with a focus on the 'central global market' (UK, Europe, Middle East and Africa)	Acquired Apprion , an IIoT company, offering intelligent, industrial applications and services for the process manufacturing industry, and Blue Canopy , specialist in customised cybersecurity, data analytics and application development solutions for the Federal civilian financial, education, healthcare, defense and intelligence sectors. Currently recruiting for a Director of Operations, Digital Solutions, based in the UK
Mott MacDonald	Firm aspires to be <i>digital by default</i> . It has recently launched the GoDigital initiative within the environment division to drive collaboration, innovation and collective working across the business. Group IT director Jon Malam said: "Becoming digital by default doesn't just mean providing our clients with digital solutions. It starts with ensuring our own ways of working take advantage of the digital revolution, as the more efficient we are, the more efficient we can be for our clients." Core is Mott MacDonald's digital infrastructure consultancy offering focused on assisting public sector organisations and commercial businesses with digital infrastructure design, procurement and construction services	
Ramboll	Torben Kjaer, head of digital innovation, is looking into how the firm can make its services 'go more digital'. Firm is looking to attract CIOs to its business and is actively recruiting in this space. Kjaer has been 'transforming' the company's IT systems since 2012. Digitalisation officially became part of group strategy in 2017	Acquired environmental, health and safety consultancy ENW Management including its cloud-based platform, Lawly, used to recognise and administer legislative compliance. Hilde Tonne appointed chief innovation officer to head up the firm's digital transformation
Royal HaskoningDHV	Royal Haskoning DHV underlines its 'heavy investment in digital transformation and innovation' including completion of first digital environmental impact statement featuring bookmarks, planning law pop-up windows, videos, photos and virtual reality walkthroughs, designed to give planners/decision-makers/stakeholders a more user-friendly experience	Partnerships with technology startup incubator YES!Delft , and The Green Village , a platform which celebrates sustainable innovations

RPS Group	RPS' Digital Transformation team based in Belfast is driving the adoption of emerging and immersive technologies, such as virtual reality (VR) and augmented reality (AR) across the wider RPS Group and across numerous fields including BIM, health and safety training, asset management. With emphasis on mapping/surveying (digital terrain modelling service) and construction/design, RPS uses a range of technologies, including robotic instruments, RTK GPS equipment, terrestrial scanning, UAV and LiDAR. Capability recently strengthened with addition of a 3D Visual and Infrastructure Designer. Digital skills are core also to RPS' ocean science services for which it uses large-scale data integration, Big Data analytics, cloud computing, management and dissemination technologies	
SLR	Offers data capture, management and manipulation; geoprocessing and spatial analysis; spatial modelling; visualisation; development and management of GIS systems. Recently unveiled prototype VR app to enhance landscape and visual impact assessment (LVIA) processes	Collaborated as part of Ryder Alliance with BIM Academy and BIM consultant Rapid 5D
Stantec (incorporating MWH)	Offers range of digital solutions integrated across its services including: BIM, design tech and VR. Also a geomatics service offering which undertakes surveys usually with GIS, GPS, 3D laser scanners and aerial photogrammetry with drones more commonly being used for surveying	Sale of MWH's wet infrastructure business analytics softwarebusiness Innovyze (to PE fund EQT which also acquired Cardno's XP Solutions)
Sweco	Sweco offers a range of specialised information and data co-ordination services across construction, real estate, industry and infrastructure. Particular focus placed on application of analytics to increase asset efficiency including development of a suite of bespoke modelling tools under its performance & efficiency analytics reporting (PEAR) initiative, aimed at cutting operational costs and saving carbon	
Tetra Tech Inc	Data analytics are key to Tetra Tech's strategy to 'lead with science'. It is actively targeting data analytics firms with proprietary software to manage highly complicated sensor arrays to help boost its smart water activities and expertise as part of its goal of becoming a 'premier worldwide consulting, engineering and constructing management firm'	Acquired INDUS Corporation (INDUS)
Wood, E&IS (formerly Amec Foster Wheeler E&I)	Wood Group provides data analytics and software design services to asset owners and operators wanting to improve operational and data efficiency, predict operational or safety issues and drive down costs associated with inspection and maintenance. Wood's digital solutions include ENVision, a real-time environmental compliance monitoring, reporting and analytics suite	
WorleyParsons/Advisian	WorleyParsons established Digital Enterprise in 2014 as part of its drive to be 'a global leader in the application of smart technology'. Proprietary technologies include: floodplain management software (waterRIDE); integrated cost and time management information system (Prediction+). Also highlighted is its Aerial Data Management business which assists organisations 'acquire and manage data safely and cost-effectively using advanced Remotely Piloted Aircraft Systems (RPAS)'	Partnerships with: artificial intelligence and machine learning software and hardware specialist, BrainChip ; hydrocarbons-focused consultancy and software provider KBC Advanced Technologies ; data science company SaltGrid to help minimise health, safety and environmental incidents by leveraging machine learning and artificial intelligence; MoU with end-to-end Data as a Service (DaaS) solutions provider Pointerra Ltd to provide the 3D data management and visualization elements of WP's asset management solutions. Also an exclusive partnership with Professor Bent Flyvbjerg of Oxford University, England, focused on introducing Reference Class Forecasting (RCF) for mega-projects in Asia Pacific
WSP	WSP's <i>Global smart consulting and technology</i> initiative aims 'to enable our clients to benefit from innovative digital technologies, helping them to deliver more efficient, insightful and effective services', with particular focus on smart cities, smart buildings and infrastructure, digital services, connected and automated vehicles, data collection, analytics/visualization and data management	Concludes a strategic investment in BIM One, a specialist in project management and technologies implementation related to building information modeling (BIM), whose services include software-as-a-service (SaaS) application, and BIM Track - designed to maximise interdisciplinary collaboration in the areas of digital 3D model construction and management. Gianluca Barletta appointed head of smart consulting to lead <i>Global smart consulting and technology</i> initiative