ALL TEXT RM DEC Panels Aug 2025

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In 1964 when US computer company Digital Equipment Corporation (DEC) picked Reading for its first UK office, there was more at play than favourable geography. Historical forces of change had produced conditions ideal for innovation and growth. More than 800 years before DEC, the union of royalty and religion resulted in an abbey that proved a catalyst for Reading's advancement. Reading would evolve from aspiring market town to an international manufacturing centre. As the town grew in stature innovation, ideas and people flowed in – accelerating Reading's transformation. By the 20th century technology, human endeavour and location were combining to drive change with Reading poised for its biggest reinvention yet.

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Faith in Reading Reading Abbey was founded by King Henry I to reflect his devotion to God and serve as a fitting place of final rest. Access to the Rivers Kennet and Thames made it easier to transport the stone for construction while proximity to roads helped deliver a steady stream of the faithful to worship. The Abbey helped propel Reading from Saxon trading centre to regional economic power. It was one of Northern Europe's largest monasteries – granted authority over royal lands, lords' domains and other properties by Henry I. The Abbot running the monastery was also able to mint coins and levy taxes. As a significant centre of pilgrimage, the Abbey attracted visitors and boosted the local economy. Its vast wealth and lands contributed to the prosperity of the town, supporting fairs and markets. As trade and commerce flowed, disputes developed. Wealthy merchants, organised in the town's guild, clashed with the Abbey over independence, an argument only resolved by a royal intervention. The wealth contributed to a flourishing of art and creative expression at the Abbey. It was innovative, housing a scriptorium and one of England's earliest libraries. A few of the rich and colourful manuscripts survive from this time. The Election of Thomas Clerke as Mayor of Reading, 1460. When King Henry I founded Reading Abbey in 1121 he gave control of the town to the Abbot. As the town grew rich, the town's people wanted more control over their affairs. This led to conflicts between the Abbot and the Merchant Guild. In 1498 the merchants ignored the Abbot's choice for mayor and picked their own candidate. Complex calculations As trade accelerated and diversified in Reading, business became a complex operation for people trying to monitor the flow of goods, services and money. The slide rule came to their aid. Invented around 1620 by William Oughtred, slide rules exploited developments in logarithms enabling people to make more accurate calculations – particularly in multiplication and division. Slide rules of all shapes and sizes were created to perform very different calculations, with many industries relying on bespoke devices such as those used to calculate alcohol strength, the amount of meat on a cow or interest on loans. Over the years, they became an indispensable tool for many employees – and for the officials whose job it was to tax them! Widespread use of slide rules only began to decline with the rise of electronic calculators and computers in the mid-1960s. By the early eighteenth century new printing technology had spread far and wide.

The Reading Mercury or Weekly Entertainer was Reading's first newspaper, published on 8 July 1723. Reading Abbey is built as a result of Royal favour and the area's geographical advantages. Roads and river links serve both its construction and the flow of royal visitors and pilgrims. The Abbey's influence on finance and land, boosts the town's economy and creates a centre of commerce. Agreement reached between the Abbey and Reading's Merchant Guild afer a long-running dispute over markets, grazing and taxes. This accord allowed both to benefit from a more stable and prosperous economy. Reading Abbey is seized by the king and its powers revoked as part of Henry VIII's dissolution of the monasteries. Capitalising on advances in printing technology and skills, Reading mayor John Watts launches the town's first weekly newspaper. A local champion, the Reading Mercury proclaims the town's market one of the best in England. The town's Merchant Guild is granted freedom to branch out and trade across England. Reading's goods could now be transported to markets further afield, increasing the town's economic prosperity. Printing using Gutenberg's system of moveable type (invented in 1450) arrives in Britain from the continent. William Caxton opens his first printing workshop in London. Mathematician and theological writer John Napier publishes his book of logarithms to simplify calculations using multiplication and division. This enables merchants to calculate exchange rates, measures and prices more quickly and accurately. The first of what would become one of Reading's biggest and most renowned businesses begins operation: Simonds Brewery.

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Future-ready railway Isambard Kingdom Brunel's engineering mindset and determination bequeathed Reading a railway fit for the future. Brunel was commissioned by Bath merchants to create a fast and direct transport link to London. He delivered a 'road of iron' through London and the Thames Valley that wasn't simply fast for its time but future-proof – able to support increasing speeds – while also positioning Reading as a transport and business hub. In 1840 travel to London took an hour. New lines plugged into Reading and new train companies ran services through the town, speeding Reading's famous biscuits, bulbs and beer across the nation and to the empire's seaports. A century after Reading's station opened, GWR trains were averaging the fastest speeds in the world. Reading also took the lead in 1839 with the rollout of electrical telecommunications, when GWR became the first train company to use track-side telegraphy. Above: High Bridge, Reading, in 1816. Note the canal barge on the River Kennet. In 1723 the Kennet Navigation opened as far as Newbury. By 1810 the canal extended to Bath, and it was observed that goods of every description could be bought in Reading as cheaply as in London. Main: This tank engine was used in the 1890s on the Huntley & Palmers factory sidings to move goods trucks containing coal, timber and of course, biscuits! The world's first train journey is completed using a steam locomotive. It runs a total distance of nine miles along a mining track in Wales. Reading becomes one of the first provincial towns to generate coal gas with the Reading Gas Light Company on Bridge Street. Years later, the railway helps speed delivery of coal and increase loads. Robert Stephenson's Rocket wins the Rainhill Trials, a competition to pick the most effective locomotive for the Liverpool and Manchester Railway. Rainhill establishes the viability of the steam engine for passenger services. The Royal Berkshire

Hospital is established to meet the needs of a growing population. A stream of injured construction workers from the Great Western Railway (GWR) are among those first treated. GWR is the first rail company to use the electric telegraph for fast communications. It uses a four-needle system from Cooke and Wheatstone, with wires running alongside its tracks. The Kennet and Avon Canal is completed and officially opened for freight between London and Bristol via Reading. Cargo loads peak at just under 400,000 tons a year. Joseph Huntley opens a biscuit and cake shop on London Street. This is the forerunner of Huntley & Palmers biscuit factory, a future Reading business giant. The company would grow to employ 5,000 workers and export globally. Sutton's Seeds is established, completing the trio of Reading's biggest and best-known employers of the age. It takes advantage of abundant agricultural land. Inventor William Cooke and physicist Charles Wheatstone demonstrate the world's first practical telegraph system – messages sent as a series of electronic pulses over long distances down copper wires. The Penny Post revolutionises postal delivery, opening up an era of catalogue shopping for companies including Suttons Seeds. GWR's stations adopt a standardised system of timekeeping that's soon employed by local authorities.

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Love affair with the telephone Reading experienced spectacular demand for the early telephone service. When the telephone first came to Reading, customers could either subscribe to get a home or business line, or use a public call room – eight existed in Reading by 1894. Calls were routed through local exchanges but there was a limit to the number that could be processed. Also, voice signals had a limited transmission length over copper cables. To prepare for growth, the National Telephone Company (NTC) built exchanges in Marlow, Slough, Windsor, Eton and Staines. Reading's first automatic exchange, for fast and reliable call handling, came in 1934. Such was the demand that the four-digit phone number system was exhausted in the Reading area by 1954, 10 years sooner than expected, and a five-figure system introduced. By 1964 the number of telephones in the area had doubled – compared to just over 50 percent growth across the UK. Above: The telegraph room at Reading's main Post Office on Friar Street in 1947. A day and night service provided 70,000 transactions a week. Main: Decorations were hung on the exterior of Reading's Suttons Seeds on the Forbury in anticipation of Queen Elizabeth II's coronation in 1953. From humble origins in the early 19th century, selling their goods from a stall in Reading's nearby marketplace, Suttons built a global reputation for the quality of their seeds. Reading is at the forefront of a technical revolution: William Henry Fox Talbot, inventor of the process of turning a photographic negative into a print, opens the world's first commercial studio on Russell Terrace (now Baker Street). His studio produces the first book illustrated with photographic prints. This landmark innovation in science and art enhanced Reading's significance in Victorian culture. Release of Thomas de Colmar's Arithmometer – the first mechanical calculator reliable enough to be used by businesses. 5,000 are produced. Reading's Schools of Art and Science (both founded by 1870) combine to form a technical college in the town centre. It's the first step towards Reading University. Felt & Tarrant Manufacturing Company starts selling comptometers – the first successful push-button calculators. Comptometer becomes a generic name for these fast and accurate devices.

Reading's future as a passenger train and freight hub takes a step forward with construction of the Hungerford and Basingstoke branch lines. Alexander Graham Bell makes the first transmission of intelligible speech over electrical wires using his patented technology. Nine years afer the telephone arrives in Britain, and following negotiations with Reading Town Council, the South of England Telephone Company (SETC) opens a telephone exchange and offices at 10 High Street. By adopting telephony early, Reading positions itself to benefit from future advances in telecommunications. The US government completes its population census using an electrical counting machine – a 'tabulator' – from Herman Hollerith. It processes more than 60 million records accurately and in record time.

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Women first to tech The mechanisation of the workplace with comptometers and tabulators had an unexpected effect: women became the first skilled operators of business technology. Comptometers replaced pen and paper in clerical roles like accounting that were widely considered 'women's work'. But many women were also programming the software. These early data-processing machines were reliable, easy to use and affordable and businesses soon came to depend on them. As comptometers gave way to computers, the British government recognised the existence of a 'machine class' pay grade within the Civil Service – those programming and operating its computers. Many in the machine class were women who worked on systems for the new welfare state, relied on by organisations like the Ministry of Pensions and National Insurance in Reading. Sadly, they were paid less than their colleagues as the role was considered inferior to other office jobs and opportunities for career advancement were limited. Automating workplace calculations The fallout from the US government's use of Herman Hollerith's tabulator was immediate – and shaped workplace computation for decades. Hollerith's electric machine promised an end to the drudgery of data processing. Britain was a huge market: the British Tabulating Machine Company (BTM), which started as The Tabulator Ltd in 1902, made and sold Hollerith's machines under licence. Manufacturers and rail suppliers – the kinds of companies found in Reading – were early customers, using tabulators in accounting, stock control and wages. If you couldn't afford a tabulator or lacked the skills to operate one – not a problem. By the 1930s, BTM's service bureau could perform the work for you, at a price. BTM dominated in Britain and the Commonwealth but as DEC landed, the first big computers promised a revolution in processing. To compete, BTM merged with Powers-Samas, another British tabulating machine company, becoming International Computers and Tabulators (ICT). ICT then became part of International Computers Limited (ICL) which would establish a foothold in Reading during the 1970s. Guglielmo Marconi's wireless signals were radio waves that he used to transmit messages over long distances. His work led to the development of radio and television. Reading University College is born as Oxford University takes over management of Reading's Schools of Art and Science, in a bid to increase access to higher education. The Reading Electric Supply Company fires up its power station on Vastern Road. The riverside location means easy access to water for cooling and a convenient means of coal delivery. Guglielmo Marconi conducts the world's first radio transmission – sending a signal 2km (1.25 miles) without wires. Marconi perfects

his system in Britain and makes the first transatlantic transmission five years later. Reading Corporation begins operating electric trams. Motor buses follow 16 years later. The British Broadcasting Company (BBC) makes its first radio broadcast. It uses Marconi's pioneering 2LO studio and technology. The National Telephone Company (NTC), which absorbed SETC, produces a telephone directory serving Thames Valley. One of the first in the country, it lists 300 private, business and institutional subscribers in Reading. The motor car officially comes to Reading with the Thousand Mile Trial. This cross-country cavalcade, promoted by the Royal Automobile Club, is intended to prove the viability of the car as a passenger vehicle. The Coley branch rail line opens to move beer from Simonds Brewery and jam from the goods yards of the Co-operative Wholesale Society Preserve Factory. The University of Reading receives its royal charter, gaining independence from Oxford with the power to award degrees.

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A new breeze brings diversity Modern-day Reading's business roots are anchored in the post-war period when new work – and workers – brought increased commercial diversity. The four Bs – biscuits, bulbs, beer and bricks – had dominated, and the presence of GWR's signalling works department had led to a network of back-street engineering firms supplying parts and maintenance. Post-war, Reading's new manufacturers were producing everything from steam pumps and aircraft components to toilet soap, safety razors, cosmetics and ballpoint pens. Companies in London were also moving to Reading to decentralise and escape rising property prices. Reading became a headquarters for many, or a location for major departments such as administration. Government departments migrated to Reading too, with buildings for National Insurance and its No 2 District Taxation office on Friar and Blagrave Streets. Commuting to work from Reading also became a trend. Workers without a car had easy access to buses and mainline and regional rail services. Left: An architects' ambitious concept for the future of Reading University's campus in 1905. It includes a driveway for carriages opening onto London Road although this part of the scheme was never built. Picture credit: Reading University Special Collections Nuclear research created a demand for powerful computing technology but many people were opposed to nuclear weapons. Over 6,000 protesters marched from London to Aldermaston, passing through Reading in 1961. University, the Reading way An award-winning research leader, Reading University was founded in a spirit of practical application of knowledge. With just nine universities in Britain by 1860, official efforts began to widen access to affordable, university-level education. Reading College became one of the first educational establishments to join an 'extension' scheme run by Oxford University. In the first year, the College had 658 part-time students, with classes in the evenings and Saturdays to accommodate the needs of a working population. Classes spanned mathematics, chemistry, machine drawing and wood carving, reflecting the College's goal for a curriculum that offered both academic and technical courses. In 1894 the first full-time students were in place taking an agricultural diploma. The relationship with science, commerce and industry was born. Reading's Caversham Park became home of BBC Monitoring from 1943. BBC staff used technology to listen in to radio broadcasts from

all over the world. Picture credit: BBC Archive Aircraf manufacturer Richard Fairey buys a 150-acre (0.6km^2) plot of open land near the village of Heathrow, Middlesex, to build an airfield and hangars for development and testing. The M4 is born. Inspired by advances in the US and Germany, highway engineers of the County Surveyors Society draf a national motorways plan. Berkshire and Wiltshire County Council identify a route to relieve traffic on the A4. Reading declared a 'closed town' – meaning an official permit is needed to move there. The relocation of civil servants from London and Reading's new status as a regional capital puts local housing under incredible pressure. Atomic Energy Research Establishment (AERE) opens at Harwell, Oxfordshire, for government-funded research. Digital Equipment Corporation's UK founder, John Leng, would start his career at AERE five years later. The first commercial flights depart from Heathrow as the airfield switches from military to civilian use and is designated London's main airport. Ten years afer inventor and engineer John Logie Baird first demonstrated TV, the BBC begins regular transmission of a 'high-definition' TV service in the London area. Construction of Earley Power Station begins under a plan to expand electricity generation to meet industry's wartime capacity demands. The plant is online two years later. The BBC's Listening Service moves to Caversham Park House. Up to 1,000 staff monitor enemy radio broadcasts. The service's role evolves during the Cold War and continues to operate at Caversham for the next 75 years. Reading University moves to Whiteknights Park, meaning space for more students and expanded teaching facilities. Researchers at Bell Labs deliver the transistor, a device that will replace bulky valves in electronics, dramatically reducing the size and increasing the potential of computers.

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At the beginning of the 1960s most computers were only found in universities and research establishments. In 1962 Reading University took delivery of a British-built Elliott 803 computer, at the cost of about £29,000. World on Reading's doorstep Heathrow's change from military to civilian airfield in 1946 would open Reading directly to international travellers and trade. Extensively expanded for the RAF during the Second World War, the government had designated Heathrow as London's main civilian aviation hub. Five years after the first commercial flights, the airport was serving 796,000 passengers a year. Custom-built airliners, more destinations and affordable fares accelerated passenger numbers, leading to the construction of the airport's first purpose-built terminal in 1955. An architect-designed building, it befitted the airport's prestigious status. It housed shops, a restaurant, a viewing platform and a subway for vehicles. Two years later, the first non-stop jet flight arrived from California – future home of high tech – after a 17-hour journey. The pieces were in place for an airport serving the UK, Europe and the world that would attract business travellers – and companies such as DEC – to Reading. The government requisitioned land at village of Heath Row during the Second World War. This became a new civil airport for London in 1946, and with its proximity to Reading, increased business opportunities. Picture credits: Getty Images (above) and Alamy (main) The world's first business computer successfully runs its first program. The Lyons Electronic Office, LEO, from café and food giant J Lyons & Co, calculates bakery valuations. An Atomic Weapons

Research Establishment (AWRE) opens south-west of Reading at RAF Aldermaston. A frenetic period of office modernisation and new development is ushered in afer the Government abolishes the need to obtain a building licence. Insurance firms lead the charge in Reading. Heathrow Airport opens its first purpose-built terminal. Associated-Rediffusion begins broadcasting TV programmes over fixed networks to subscribers in areas of poor reception. A Rediffusion branch is opened in Reading. Digital Equipment Corp (DEC), founded in the US by Ken Olsen and Harlan Anderson, determined they could 'beat IBM at their own game'. DEC starts as a maker of modules that can be wired together to build computers. Comprehensive Test Ban Treaty signed, to control testing of nuclear weapons. Scientists at an AWRE facility at Blacknest, near Reading, later use a DEC PDP-11/34 to assist their work identifying nuclear tests. The microchip is unveiled by US researchers: it shrinks the components needed for computer circuitry onto a single, small, integrated chip. DEC introduces its first computer – the Programmable Data Processor 1 (PDP-1). It puts the user in charge by providing an immediate and direct response to their commands. The price starts at $125,000 and 53 are sold. Reading University takes delivery of its first computer – an Elliott 80 – from Britain's successful Elliott Brothers. The company supplies half of Britain's digital computers at this time. DEC's first 12-bit computer – the PDP-5 – is announced. It's a huge advance in usability because peripherals, such as printers, can be added incrementally. Labour Party leader Harold Wilson outlines his vision that Britain must harness the 'white heat' of the scientific revolution to prosper. His party takes power a year later.

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Digital missionaries and an old church Digital Equipment Corporation (DEC) was a new type of company making a new type of computer. Its founders believed that computers could be better – and that the companies making them could be better places to work. Britain was among the first countries DEC selected for international expansion with the mission handed to British-born Canadian citizen John Leng. Leng opened DEC's UK office in spring 1964. He picked an empty suite, formerly a bingo hall, above a furniture shop in an old church at 11 Castle Street. It was then just him and secretary, Hilary Cheeke. DEC referred to its new team as 'digital missionaries'. Why the UK? To be close to the UK Atomic Energy Authority, an early DEC user. Why Reading? John had approached Bracknell but was told only British companies could locate there. 'Reading was more welcoming, and a better choice,' John told us. Reading was ideally situated for access to scientific research customers in Oxford and Cambridge and to transport networks – with train links across Britain and flights from Heathrow to customers in Europe. John is credited with coining the phrase 'minicomputer' – a term that would be adopted by the industry. John had no idea the phrase would stick. 'Minicomputer' defined something smaller, more versatile and more affordable than the room-sized computers of the day. They could be programmed and operated by ordinary engineers and office workers. More than 100 companies made minicomputers, but DEC became the most successful – only DEC didn't call its systems computers, it called them Programmable Data Processors (PDPs). John Leng picture credit: Computer History Museum, California Picture courtesy of John Leng 'Mini' – the next big thing in computers

John Leng, Digital Equipment Corporation UK founder, DEC sales report 'Here is the latest minicomputer activity in the land of the miniskirts as I drive around in my Mini Minor...'

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Geoffrey Down, a 20-year-old apprentice aircraft fitter described the scene in Reading 'The teenagers go coffee-bar crawling, there are five or seven open until 11pm. With music blaring in the background the youths spin endless yarns... occasionally they rise to gyrate to some Twist records.' A picture of Reading when DEC arrived John Leng arrived as Britain and Reading were buoyed by a spirit of renewal and regeneration. A general election had returned Harold Wilson as Prime Minister, who promised to transform Britain in the 'white heat' of a scientific revolution. Reading had eyes firmly fixed on this future. The town Corporation and Chamber of Commerce and Trade staged a festival intended to showcase Reading's industrial potential and persuade students from the University, Technical College and local senior schools to pursue careers here. The nation's railway company British Railways (BR) picked Reading as the regional centre for its rolling stock control system. BR also opened a computing centre where Honeywell systems took on administration of payroll for its 60,000 employees along with revenue, store management, accountancy and statistics. The General Post Office, then running the nation's telephone service, opened a £4m long-distance telephone exchange on Basingstoke Road that was important to Reading and the country. Job vacancies for places such as the Atomic Weapons Research Establishment filled the local papers and came without expectations of previous experience. Not only was office space in huge supply but large-scale housing development was coming. A large estate was planned on a 25-acre site at Northumberland Avenue and further new building in Woodley. Hattie Jacques, star of the Carry On films, draws the crowds to the Battle Hospital fete. Coffee bars were the places to hang out in the 1960s. Popular cafés included the Honey Bear in London Street, Platters in Cross Street and The Viking on Caversham Road. The 'Ideal Barmaid contest' was a publicity stunt for the pubs owned by Reading's Simonds brewery! The YMCA was often the only place that young men could afford to stay when they left home and started work in a new town. Hickies opened a Hi-Fi showroom at their Friar Street store as demand for new home entertainment products grew. In the lead up to the 1964 general election. Prime Minister Sir Alec Douglas-Home spoke to the crowd from the Forbury Gardens bandstand. Cliff Richard was a major rock n roll star in the early 1960s with a string of hits to his name. Hickie's Music Shop window displays marked the release of his film, Expresso Bongo. In the early1960s Reading's main shopping streets were already populated by big national chain stores, but unlike today the main streets were open to road traffic. The Majestic ballroom on Caversham Road attracted many Sixties bands, including more eccentric acts like Screaming Lord Sutch. Sutch's horror-themed shows started with him emerging from a coffin on stage! The deep freeze of winter 1963 saw Reading Football club's trainer Jimmy Wallbanks lead a team of players to clear snow from the Tilehurst End terrace. The Olympia ballroom was just a place for dancing. Leading Labour MP Michael Foot takes the floor at a Reading CND meeting. Foot had attended Leighton Park School in Reading. Huntley & Palmers biscuit factory was still Reading's largest employer in the 1960s. However many of its old buildings were unsuitable

for modern food production and despite some rebuilding, many of the buildings were demolished. Reading University student's Rag Day activities included shoe shining to raise money for charity. The annual Rag Day events and town centre parades created a carnival atmosphere. A newspaper seller outside the parade of shops located at Reading's Southern railway station 1963. Today this area is occupied by the station's main ticket office. The elephants from Roberts Brothers Circus were regular visitors to Hills Meadow in Caversham, and are seen here slowly parading along George Street. These Christmas shoppers were some of last to enjoy the atmosphere of the Victorian Market Arcade in Broad Street before it was redeveloped in 1964. Norman Hackett's Music store was the place to buy musical equipment. Today it is the site of Sainsbury's Broad Street store. By the early 1960s supermarkets were replacing traditional grocers and other shops in Reading. Brooke Bond tea packaging was produced at Oxford Road's Berkshire Printers Ltd. Brooke Bond teamed up with Reading's Odeon cinema to promote both their product and the latest Disney film to shoppers. Bingo in Reading Town Hall became a very popular pastime after commercial bingo was legalised by the 1960 Betting and Gaming Act. Residential tower blocks were built at Coley Park in 1961. People were moved from the old, terraced homes being demolished for new roads and commercial developments. Broad Street has always been Reading's main shopping street. By the 1960s chain stores increasingly replaced small independent traders.

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A little bit different: doing 'IT' the DEC way American engineers Ken Olsen and Harlan Anderson founded Digital Equipment Corporation (DEC) in 1957, choosing a disused Massachusetts mill as HQ. Olsen articulated a pioneering set of corporate values. These became known as 'the DEC way'. The DEC way was a rejection of huge, expensive computers and their big, bureaucratic manufacturers. It was a belief that computers could be better and their manufacturers better places to work. It was an entrepreneurial spirit that fostered experimentation and allowed mistakes. It encouraged staff initiative and personality responsibility. In return the company offered loyalty, opportunity and advancement. Above all, the DEC way meant 'doing the right thing' – for employees and customers. It was a success, driving innovation and growth, and DEC was soon eyeing overseas markets. It was in this spirit that junior executive John Leng was sent to establish a foothold in Britain. A new chapter was about to begin! Above: Ken Olsen. Main: This assembly line on Arkwright Road produced DEC's first UK-built mini-computers. Seen here in 1968, it came online ahead of DEC's factories in Scotland and the Republic of Ireland. Arkwright Road was home to the Computer Special Systems Group, who adapted DEC computers for customer. Some adaptations were turned into commercial products. Picture credit: The National Museum of Computing / Computer Weekly Archive

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In the 40 years following John Leng's arrival, Reading changed like no other time in its history – as did Britain. It was an era of work hard and play hard: big salaries, social mobility and affluence for those associated with the tech economy. DEC and British

computing giant Internal Computers and Tabulators (ICT), then International Computers Limited (ICL), were – for a while – the biggest and best-known high-tech names. The personal computer, voice and data networking, and advances in software changed all this. As the last of the manufacturers disappeared, Reading came to occupy a central position in the digitisation of daily life in Britain and beyond. The discovery of North Sea oil during the 1960s sparked a race between energy companies to stake their claims. In an era before commercial global positioning systems, at least one US company turned – somewhat discreetly – to DEC UK for help charting oilfields using mini-computers on board ships.

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Inside the skunkworks Britain's national computer company Computer Special Systems Group (CSSG) performed a critical role for DEC – conducting specialist engineering work adapting standard DEC computers to order. DEC wasn't the only computer company in the Reading area taking on mighty IBM. Reading was the first place outside DEC's US home to have a CSSG presence – a site on Arkwright Road that grew rapidly to five buildings. CSSG marked DEC UK's transition from purely sales and support to manufacturing. Hundreds of engineers worked on hardware and software armed with soldering irons and oscilloscopes in an environment described as more garage than laboratory. CSSG considered itself a 'skunkworks' – a small, unofficial, fast-moving technology project. One of CSSG's biggest projects was for an automated truck tyre manufacturing system built by networking 16 DEC PDP-11/34s for a factory in Ukraine. One of its smallest: making a DEC VT30 display for a PDP-11 to generate rich colour charts for ITN election coverage. The DEC sales team liked to boast there was no challenge CSSG could not meet. International Computers Ltd (ICL) was the result of a government-driven merger of smaller British firms to create a company with the size and power to challenge the US computer giant. ICL developed big computers called mainframes, computer servers, personal computers, software and networking. It also offered training and support to install and use its systems. Company offices included Bridge House in Reading and a site at Winnersh. ICL was a popular choice for the public sector, often picked because it was seen as the nation's computer company. Customers in Reading included the University and the old Ministry of Pensions and National Insurance on Queens Road. National customers included the Home Office, which spent £10m on an ICL immigration control system at airports and seaports during the 1990s. 'We loved to have the best of both worlds. We loved being part of DEC but we were intensely proud - we were the renegades in DEC. We did non-standard stuff and we made it work.' Ken Salmon, Computer Special Systems Group project engineer (DEC UK 60th anniversary oral history interview) Touchscreen computing came of age with mobile phones and tablets, but work to perfect the technology goes back decades. DEC was among those striving to solve the challenge; its GT40 used a light pen to interact with the screen but the GT40's price and size made it unsuitable for most customers. Picture credit: UKRI Science and Technology Facilities Council Reading's first 'skyscraper' played a key part in Harold Wilson's scientific revolution. Bridge House was home to the software engineering department of International Computers Limited, created by his Government as Britain's 'official' computer firm. ICL's team moved to Bridge House from Putney, West London. DEC introduces the

PDP-8 and it's an instant hit: it becomes the world's first mass-produced minicomputer with 53,000 sold. Oil discovered in the North Sea. Researchers on exploration ships use DEC PDP-8s as part of global positioning and mapping systems. Reading University's physics department takes delivery of an £8,000 DEC PDP-8 minicomputer to process data as part of experiments with the Herald research reactor at the Atomic Weapons Research Establishment (AWRE), Aldermaston. DEC's Computer Special Systems Group (CSSG) established on Arkwright Road. CSSG is a hothouse of development. The Government sets up International Computers Ltd (ICL) as Britain's national computer company.

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A road with unexpected returns The M4 has impacted Reading in ways its planners in 1938 could not have imagined. Envisioned in a time before computers, the M4 had one job: to shorten journey times between London and Wales by taking traffic off the A4 and out of Reading. It delivered on the goal and was one of the reasons DEC selected Reading for its HQ in 1964. But it wasn't until DEC moved to Worton Grange in 1981 that the motorway took on a new significance in the minds of developers as a means to attract other high-tech firms. Reading's business parks are now firmly plugged into the motorway network with access to the M4 and proximity to the M25 used to attract new companies. Congestion, unfortunately, has remained a constant. DEC offered to pay for a new access road to the M4 from its campus but Reading's biggest employer could not persuade the authorities. Tailbacks between the M4 and DEC Park were legendary. DEC's powerful mini- computers were smaller and easier to operate than the era's mainframes. This photo from 1973 shows a University of Reading team running an ICL 1904S in a room likely equipped with cooling and a special power supply. Terminals for input and output are in the foreground with cabinets for storage, memory and processing behind. Picture credit: Special Collections at Reading University The M4 helped plug Reading into regional economic centres outside the South East through a network of high-speed roads. That network had been the vision of inter-war planners, inspired by America's freeways and German autobahns. A multi-decade feat of construction, the M4 cut through fields between London and Wales with Reading's Junction 11 opening in 1971. Picture credits: Reading Library (above) and Mirror Pics (main) The first network transmission using 'packet switching' on the Advanced Research Projects Agency Network (ARPAnet) takes place in the US – breaking information into short messages with headers made it possible to send data efficiently over telephone lines. The was an important forerunner to the internet. Inaugural flight of Concorde, the first successful supersonic commercial airliner. DEC minicomputers are used in rigorous airframe safety tests. Introduction of DEC's PDP-11 minicomputer family – one of DEC's most influential and successful computers, with 600,000 sold. Official opening of the Reading section of the M4, a motorway that becomes pivotal in attracting high-tech firms to the area. DEC opens a new factory in Galway, Republic of Ireland. Three years later, Galway is making most of DEC's small computers sold in Europe. Intel releases the first general purpose programmable microprocessor – the 4004. The microprocessor becomes a building block of the personal computer.

From Metal Box to bytes Few places have borne witness to Reading's evolving relationship with the digital economy like Forbury Road. Metal Box – once the UK's biggest packaging supplier – picked Forbury Road for its Queen's House head office in 1975. Metal Box moved on after just a decade and in came a company building the infrastructure of the new age: Energis Communications, which grew out of National Grid and built voice and data networks. These were fast-moving times and Cable & Wireless bought Energis in 2005 before it succumbed to Vodafone, who claimed C&W's network for its river of mobile traffic. The Metal Box building is now gone, replaced with new offices housing small technology and services companies that work with software and AI for business and healthcare. Above: Before building its bespoke HQ at Worton Grange, DEC chose the Metal Box building near the station to house some of its fast-growing workforce. A controversial local landmark during its day, the building was capable of holding several thousand people. Below: DEC stationed staff in a range of buildings new and old – among them what is now Hotel 1843, opposite The Oracle. Opened by writer Charles Dickens as a scientific, literary and mechanics institute, this building became DEC's centre for worldwide training in 1970. The need for more space saw training finally move to Shire Hall. Concorde flew at up to twice the speed of sound, experiencing forces that could make the aircraft up to 25cm longer. Stress testing during development was therefore essential to ensure the aircraft was safe to fly. Tests were conducted using two DEC PDP-8s and a PDP-10 to control airflows and simulate thermal and mechanical stresses. Picture credit: British Airways Scientists at AWE Blacknest revolutionised practices in forensic seismology for reliable detection and analysis of underground nuclear tests during the Cold War. They collected huge amounts of data which were processed twice a day with the help of a DEC mini-computer and a 'mainframe'. Picture credit: Creative Commons / Library of Congress Start of the oil embargo recession. Following its ethos of 'do the right thing', DEC resists cutting staff despite a fall in sales. The UK's first link to ARPAnet is established at University College London, which becomes the UK's primary internet link to the US for much of the 1980s. The vision for using Ethernet in network communications is outlined by Bob Metcalfe in the US. Even though DEC has its own network technology, it works to turn Ethernet into an industry standard and produces Ethernet products. The A329M opens as a fast route connecting the outskirts of Reading and Bracknell. Manufacturing giant Metal Box moves its head office from London to Reading. The £4.5m Queen's House quickly becomes a Reading landmark. Creation of the European Centre for Midrange Weather Forecasts for collaboration on weather forecasting. Reading wins the bid to host the Centre at Shinfield Park, thanks to this site's proximity to the University and Met Office. The UK's first high-speed train service opens with British Rail's Intercity 125 – then the world's fastest diesel engine. Journey times between Reading and London are cut to just 23 minutes. DEC opens a factory at Ayr, Scotland, to make more of its computers for fast-growing markets across Europe. Air travel to the US gets faster with the launch of scheduled Concorde flights from Heathrow – flight times to New York drop to just under three hours. The arrival of the Boeing 747 helps increase the airport's passenger numbers, too.

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Not a typical British workplace DEC's rapid expansion meant it struggled to find office space for its people, who were stationed at least 10 different sites around Reading. DEC needed room to grow. Land was bought at Worton Grange for a purpose-built complex designed by architects Arup Associates who'd conceived Sydney Opera House and Lloyds of London. The result was a modern, open-plan building for just over 1,000 people designed to break down the cultural and physical barriers between office staff and engineers and foster collaboration. Management shared the on-site restaurant and reserved car parking was banished. Cutting through the centre of DEC Park I was The Street – a green-carpeted avenue flanked by European flags and dotted with shops and seating along which wide-eyed visitors were ushered to meetings. DEC Park was the embodiment of the communal and egalitarian spirit of 'the DEC way'. David Probert, European Internet Business Group Manager (DEC UK 60th anniversary oral history interview) 'Everyone was very accessible, no-one was in a locked office that you couldn't go to and ask questions... you could talk to the engineers, you could bring them into your meetings, you could get your ideas embedded in the next generation of engineering plans.' After years of squeezing into available buildings across town, DEC commissioned a purpose-built facility at Worton Grange. Home to more than 1,000 business and technology staff, DEC Park capitalised on two of Reading's oldest resources: space and access to transport with a position right next to the M4. DEC Park was a social workspace decades ahead of its time, with a bank, travel agency and areas to network and drink coffee. A carpeted thoroughfare cut through DEC Park I, along which you could easily bump into senior managers headed to a meeting – or perhaps to the restaurant for a hamburger! DEC introduces VAX – Virtual Address eXtension. VAX's 32-bit system makes it easier for applications to share memory – ideal for larger numbers of applications and users. Also introduced is the Virtual Memory System, or VMS, an operating system for VAX. DEC ships its 100,000th computer. Lloyds of London switches manual data entry and processing for its 13 million policy transactions to a DEC PDP 11/34 on DECnet. The system halves processing times. Clive Sinclair releases the ZX80 – his first in a series of home computers that introduce a generation of schoolchildren to programming and computer games. The ZX81 and ZX Spectrum follow.

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Closing the PC skills gap The personal computer (PC) was coming and national efforts to prepare the population hit Reading by the early 1980s. DEC and International Computers Limited (ICL) had been successful in businesses but their systems were too expensive and complex for the public. The PC was becoming affordable, easier to use and benefited from a growing software market. The BBC's Computer Literacy Project resulted in the BBC Micro, a learning tool that would have been widely used in schools around Reading. The Government declared 1982 Information Technology Year, IT82, with funding for exhibitions and events to promote technology in business. A government Information Technology Centre, ITEC, opened on Abbey Square for training with more than £100,000 in funding. Its use of some DEC computers chimed with the company's belief in local community engagement. ICL

opened the first in a series of 40 Computer Points in Reading where businesses and the public could try and buy. Do the right thing: no hard sell The way DEC sold technology was different from its rivals, thanks to a philosophy of 'do the right thing'. This meant cultivating a close relationship with customers and putting them first. For a long time, sales staff received no commission and appraisals involved input from customers. DEC would foster a relationship with those using its systems, not just those paying for them. Support was important: field engineers, largely trained in Reading, would be expected to travel across the country to fix any problem at short notice, day or night. As PDPs and VAXes grew in power and software became more complex, DEC built a 400-person customer support centre in Basingstoke to keep up. DEC provided advanced remote diagnostics for hardware and software and boasted a 15-minute response time. All that – and more – at no extra charge to the customer. Gerald Marsh, DEC customer and consultant (DEC UK 60th anniversary oral history interview) 'The relationships between DEC and our companies were very close... the staff in those days were very knowledgeable and responsive.' With personal computers showing up in the workplace and homes, the Government decided it must raise awareness about the potential of new technology, declaring 1982 Information Technology Year. The Post Office responded with a series of stamps, including these featuring a Prestel information service terminal and a barcode – both launched in the UK the previous decade. Stamp designs: © Royal Mail Group Limited DEC UK took its spirit of 'do the right thing' outside the company, backing the arts, culture and sport. This included sponsoring Reading's first Half Marathon in 1983 and a reboot of the Schneider Trophy classic air race around the Isle of Wight the following year. The Royal Ballet and Old Vic theatre in London also received support. Construction starts on DEC's new head office at Reading's Worton Grange Industrial Park: DEC Park would unite all business and engineering teams at a single location. Microsof releases its first operating system, MS-DOS. PC companies pay Microsof to use it on their computers. IBM introduces its Personal Computer, the Model 5150, which triggers a revolution in business computing. It spawns an industry of hardware and sofware for these 'clones'. Release of the BBC Micro from Acorn Computers to increase PC literacy, particularly in schools. More than 1.5 million 'Beebs' are sold with 80% of UK schools owning one. Package holiday operate Intasun Holidays lists on the London Stock Exchange. Intasun leads a revolution in affordable holidays and its business runs on what's believed Europe's largest DEC VAX VMS 'cluster' outside the military. Microsof moves to Reading as part of its international expansion, opening an office on Vastern Road. DEC moves into the business personal computer market in response to the success of the IBM PC. It releases the Rainbow 100, DECmate II, and Professional 325 and 350. Reading's first half-marathon: DEC becomes an early sponsor and supplies systems and sofware to help record times and positions of 5,000 runners. Strength in numbers: DEC announces its VAXcluster product, which networks VAX computers in groups of up to 15 to work faster and more efficiently. Also unveiled is DECtalk that converts text to voice for its computers to 'speak'. Microsof's Bill Gates unveils Interface Manager, which is eventually branded as Windows. Reading University joins the newly created Joint Academic Network (JANET) – a high-speed computer network linking education and research communities in

the UK and overseas. Early emails with the US pass through central DEC systems at University College London.

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Reading takes a lead on R&D Reading became a hotspot for research and development from the early 1980s, as DEC's US parent targeted new markets in software and networking. R&D had taken place in the US but telecomms and network markets in Europe were subject to lots of rules and technical requirements specific to individual countries. Thanks to its location and talent pool, responsibility for European R&D transferred to Reading. Engineers played a key part in building the internet, leading development of the network protocols which govern how devices communicate. Responsibility for office productivity and automation software was also handed to Reading. ALL-IN-1 was DEC's office automation software, used to replace paper records and letters with digital documents and electronic mail using networked DEC computers. Reading's engineers led design and engineering and language translation for use in Europe. Shaheed Haque, Principal Engineer and patent holder (DEC UK 60th anniversary oral history interview) 'IS-IS protocol was written in Reading by a couple of the guys in our group... you couldn't have built the internet without that. It's really as fundamental as that.' DEC established a loyal following, founded in part on a sales culture that didn't attempt to upsell customers. Its phone support operation in Reading and Basingstoke was a star attraction with speedy response times and helpful staff well- versed in the technology. The DEC spirit also served the local community. Reading College was among those to benefit, here with its DECmate III personal computers for students as part of a Future of Work Initiative to help colleges across the UK build a digital-ready workforce. Picture credit: The National Museum of Computing / Computer Weekly Archive Second release of DEC's ALL-IN-1 office automation and collaboration sofware whose development has been led by DEC in Reading. This provided word processing, email, calendar and data management, all in one! Working flat out, DEC's Reading team delivers an upgraded computer system to collect the times and finishing positions of 22,000 runners participating in the 1985 London Marathon. DEC's co-founder Ken Olsen named 'arguably' the most successful entrepreneur in the history of American business by Fortune magazine. Chernobyl nuclear reactor disaster in the Soviet Union releases a radiation cloud across Northern Europe. Thereafer DEC works with European organisations to build an atmospheric radiation monitoring network. Government planning rules are relaxed on change of use for research and development, new offices and light industry, helping Reading's manufacturing sites switch to technology and professional services spaces. Apex Plaza is completed. Reflecting Reading's status as a tech hub, one resident is The Open Group, which works with companies on standards for interoperability. Development of Thames Valley Park (TVP) starts with the renovation of the industrial Earley Power Station site. Two of tech's biggest names – Microsof and Oracle – become the finished TVP's best known residents. DEC becomes the world's second largest computer maker, with more than 120,000 employees and $11.5bn in annual revenue. Approximately 3,000 of DEC UK's 7,000 staff are in Reading.

ALL-IN-1, one for all The 1980s workplace ran on paper – memos to staff or executives' letters typed by secretaries – and via the telephone. It was slow and disconnected. DEC saw an opportunity to repeat the success of its minicomputers in speeding up data processing with the addition of software to transform the workplace. It created ALL-IN-1 running on DEC computers and networks for people to create and share electronic documents and communicate using electronic mail. Handing ALL-IN-1 to Reading put the town at the centre of a new technology trend – office productivity and collaboration software called 'groupware'. An important part of the Reading teams' work was customisation. DEC consultants would adapt ALL-IN-1 to suit customers' unique needs and advise on more efficient working practices. By the end of the 1980s ALL-IN-1 had five million users in familiar British companies and subsidiaries in banking, energy, defence and manufacturing. 'I loved the fact I was a female in a world of males who could do technical things. I loved the fact I could program in Assembler because so many people – men and women – couldn't do it. I loved turning up on site and seeing the shock on their faces, that they've got this female.' Angela Shore, DEC software consultant and one of DEC UK's first experts in ALL-IN-1 (DEC UK 60th anniversary oral history interview) Following the Chernobyl nuclear reactor disaster, DEC helped establish an internet-based monitoring system to give early warning about increased radioactivity across Finland, Norway, Sweden and Russia. DEC provided academic and research institutions across Eastern Europe with network servers following the fall of the Berlin Wall, seen here. By the mid-1990s, the backbone network of Europe's non- commercial internet was provided and managed by DEC using its servers and routers. Building the early internet DEC's reputation for reliable, high-performance computers and networking gave it an advantage in building the early internet. Its systems already routed data and voice traffic and connected academic and research organisations across Europe. DEC set up its Internet Business Group in Reading to sponsor high-profile conceptual projects and showcase the internet's potential. For example, DEC built and operated the website, electronic commerce and online video for the 1997 Guinness World Record attempt by Thrust SSC to be the first car to break the sound barrier. The Group also ran training programmes in internet-related areas, including cyber security, and got people online using branded 'kiosks' where they paid per minute to access services like websites. Over three years the Group helped DEC win more than 1,500 projects in 30 European countries. David Probert, European Internet Business Group Manager (DEC UK 60th anniversary oral history interview) 'We were different to the rest of DEC. Sometimes it created friction - we were "too marketing" and wasting money, maybe, but we were religious about this. We said: "This is the way to go".' Mini-computers, including DEC's PDPs and VAX/VMS, were built using large components and assembled manually on production lines. For the engineers, a knowledge of electronics was often more important than an understanding of silicon or software. The systems seen here are VAX 11/780s – the first of the VAX/VMS family that helped DEC become the world's second biggest computer company. Picture credit: The National Museum of Computing / Computer Weekly Archive Picture credit: Creative Commons / Aad Van Der Drift Picture credit: Creative Commons / IAEA Image Bank A more passenger-friendly Reading Station reopens following upgrades

by Network Rail. Fall of the Berlin Wall marks the official end of the Cold War. Business markets in Eastern Europe open up to Western tech companies. Tim Berners-Lee publishes a paper proposing a text-based system to find information held on networked computers: HyperText Markup Language (HTML). This enables the World Wide Web. Sussex Police work with DEC to streamline communications and knowledge sharing. A system of integrated electronic documents and messaging using ALL-IN-1 and VAX is introduced for 4,500 officers and support staff. DEC opens an £85m factory in South Queensferry, Scotland, to build microprocessors for its computers. Tim Berners-Lee writes the foundational technologies of the Web, including the world's first browser and web page. First signs of the end for DEC. Redundancies are announced in response to falling sales with a struggling economy and growing competition. Layoffs go against 'the DEC way'. Finnish student Linus Torvalds announces he's created a free operating system. This becomes Linux – a free and open alternative to Windows. The Soviet Union comes to an end in Russia and associated states. DEC secures international agreement for Kolanet – a radiation monitoring network across Finland, Norway and Russia. New DEC chairman and CEO Bob Palmer begins restructuring. Plants and units are closed, with redundancies hitting those in Reading. DEC introduces the first servers and workstations running its powerful 64-bit Alpha microprocessor. Alpha is the industry's fastest chip. DEC co-founder, Ken Olsen is fired in the face of growing internal and market challenges. Pipex becomes the UK's first provider of paid internet access over dial-up phone lines. Speeds peak at 56 kilobits per second and it could take up to 15 seconds to make a connection.

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Plugged in to the Microsoft economy Microsoft cemented Reading's place in the high-tech economy from the personal computer (PC) to today's Cloud. Co-founder Bill Gates had a vision: a PC on every desk and in every home. Yes, Compaq bought DEC but – to a great extent – it was Microsoft's software that made Compaq's deal possible thanks to the soaring success of its PC business. Windows, web browser and Office software made PCs useful and usable for companies and consumers. Another Microsoft beneficiary was Hewlett-Packard (HP) in Winnersh. HP bought Compaq to become the world's number-one PC maker – taking DEC's high-end business with it. As this politics played out, Microsoft developed new software and grew from a handful of staff to 5,000 at Thames Valley Park (TVP). The world's biggest software company called the UK its most successful European operation. In 1994, Microsoft built what would become an award-winning office space at TVP. The company's commitment to Reading and TVP was easily explained: they were plugged into the M4 corridor with space to build a collaborative environment with everyone in a single location – just like DEC years before. Decades before ChatGPT began shaking up the world, DEC encouraged some of its biggest customers to adopt an early form of Artificial Intelligence. DEC would champion AI at tradeshows like this during the 1980s and 1990s. DEC also ran a dedicated AI consultancy based in Basingstoke that became an integral part of its UK and European management operations. Freedom to follow your dream DEC encouraged initiative and the results could be amazing – including an early form of Artificial Intelligence. Richard Briggs, former DEC customer recruited by DEC (DEC UK 60th

anniversary oral history interview) ‘DEC was “the” company to work for even though many, including me, took a pay cut to join. I’ve often said... it was like getting a job today with Google, Apple or Microsoft.’ Intelligent Knowledge Based Systems (IKBS) drew on academic work and used specialised software languages in its powerful VAX/VMS systems. An IKBS could answer questions and suggest outcomes using expert knowledge of a subject and coded rules. It learned through the addition of new data and rules. DECtalk was a terminal that let its computers talk. It used an algorithm from researcher Dennis Klatt to convert text to speech. Klatt’s technology was also used in a text-to-voice synthesiser for Professor Stephen Hawking. DECtalk could produce eight voices including Perfect Paul – Klatt’s own voice, also used by Hawking. And before Google, AltaVista was the web’s most popular search engine. AltaVista delivered accurate results based on a full web search up to 100 times faster than rivals. DEC built versions of its core mini-computers to suit specific requirements. Here a lab technician is working with a DEC Modular INstrument Computer (MINC), which was a special PDP-11 for laboratory use. It could capture and convert analogue data to digital, produce graphic displays – seen here on a DEC terminal in the background – and monitor and control experiments. Picture credit: The National Museum of Computing / Computer Weekly Archive Picture credit: Used with permission of Microsoft CERN, The European Organisation for Nuclear Research, releases the sofware for the World Wide Web using a licence that makes it possible for others to work with the code. This accelerates development of the Web. DEC’s Internet Business Group is formed to expand sales in Europe, Middle East and Africa. Microsof completes its biggest property investment outside the US with development of three buildings at Thames Valley Park. In the spirit of DEC a decade earlier, Microsof creates a modern and collaborative workspace. Release of DEC’s AltaVista web search engine. It blows away the competition, quickly becoming web users’ number one choice.

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Mighty DEC falls to Compaq When DEC faltered, Compaq Computer Corporation pounced – buying Reading’s biggest employer in a deal that many staff struggled to accept. Compaq was a new generation of technology company: producing low-priced PCs and PC servers for businesses and consumers built on Intel processors and running Microsoft Windows. By the time it bought DEC, Compaq was the world’s biggest PC company – but it wanted to become the biggest technology company. To achieve that goal, Compaq needed DEC’s high-end hardware technology, VAX and Alpha, its elite engineers and its consultants – and its long list of customers. DEC had misjudged the success of the PC and the rise of sellers like Compaq while economic recessions had hit its customers’ willingness to spend. Compaq’s working culture was different from DEC’s and when the news of the takeover came it was the excuse many DEC employees used to seek new opportunities. With a shortage of computer skills in the workplace, it was important for customers to undergo training in DEC technology. Shire Hall became a global centre for that training. DEC employees also poured into 20-plus classrooms of the repurposed former County Council building to learn about the company’s latest hardware and software. With business booming, DEC’s sponsorship of the arts and culture included a £1.3 million Partners in Dance programme. This was the

single largest arts sponsorship in the UK and included financial support for the Royal School of Ballet and Sadlers Wells Theatre. The Digital Schneider Trophy revived sea plane races of the 1930s and, as well as increasing DEC's commercial profile in the UK, the sponsorship increased the popularity of air racing. A moving story Simon Darvall, Business Moves Group chairman (DEC UK 60th anniversary oral history interview) 'We built our business on DEC.' The company grew so fast with DEC it adopted the name you know today. Before becoming Business Moves Group, Robert Darvall Ltd – named after Simon's father – helped people move house. The first encounter with DEC moved six people but DEC's business was growing at such a blistering pace that managers were desperate for space to accommodate staff. People, computers and furniture flowed like water around Reading, Berkshire and beyond, according to Simon. DEC accounted for three-quarters of his company's business. The removals fleet expanded from two trucks to 20, and the number of employees increased from half a dozen to 50. In 1989 came the name change to reflect the company's growing status as a business removals specialist. Today, BMG operates internationally with 150 employees. 'DEC gave us the concrete to build… the confidence to bet on technology companies,' says Simon. Green Park becomes Reading's second business park developed to attract high-tech companies with the offer of open space and easy access to transport. Thrust SSC becomes the first car to break the sound barrier. DEC provided its website, online commerce and video streaming as part of a campaign to stimulate interest in the early internet. Compaq Computer Corporation buys DEC for $9.6bn. Remaining staff transfer to Compaq and are integrated or laid off. DEC's properties are closed or taken over, and only some DEC products are maintained. Google Inc is officially launched with $100,000 funding for its search engine. Google wins early market share thanks to a clean search experience and high-quality results. Japanese technology giant Fujitsu takes ownership of International Computers Limited (ICL), ahead of this British technology firm's plan to list on the London Stock Exchange. BT begins national rollout of broadband over existing phone lines, using Asymmetric Digital Subscriber Line (ADSL) technology. Broadband introduces dramatically faster network speeds. Other phone and cable TV companies also offer broadband.

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Corporate scandal comes to Reading Being plugged in to the high-tech economy has its downsides and Reading workers got caught up in corporate America's biggest accounting scandal during the 1990s. WorldCom sold data and voice services over fibre optic cable and picked Reading as its European base for aggressive international expansion. It snapped up every inch of Reading International Business Park (RIBP) in 2000, moving in 4,000 employees - the majority of its UK workforce – under a 20-year lease. It briefly became one of Reading's biggest ever employers – behind the University and Borough Council. It soon emerged that management had hidden the true state of WorldCom's financial health. WorldCom's boss was found guilty of a major accounting fraud and went to prison. The company sought bankruptcy protection as it restructured and cut staff in Reading and other locations. Verizon bought WorldCom in 2006 for £4.13bn ($5.3bn) and continues to operate successfully at RIBP today. DEC's Reading team recognised early on the importance of

growing online audiences, so committed technology and marketing support to key projects such as the Thrust SuperSonic Car land-speed record. DEC was behind the first internet crowd sourcing campaign that helped buy much- needed fuel, without which Thrust project director Richard Noble says he could not have made his record-breaking attempt. A giant in training Angela Shore, DEC software consultant and one of DEC UK's first experts in ALL-IN-1 (DEC UK 60th anniversary oral history interview) 'The engineers would design and program the product and show us – there were four of us – and we would train the team in the UK, who'd have to perform the upgrade for customers.' Reading became the global centre for training in computing and data processing, thanks to DEC. Hundreds of people a day – employees and customers – flowed through Reading to learn about DEC's technology. People came from as far afield as South America and the Middle East. Field engineers could spend up to six months in classes before being allowed to see customers. Specialists including Angela Shore (pictured) would bring DEC's staff up to speed on new products. Customers lacked IT teams, so depended on DEC training. Training began in Fountain House in the Butts Centre (now Broad St Mall) but growing demand and new topics like systems management and software saw expansion to Shire Hall and Highfield Park, Hook. Over time, training was offered across the UK and Europe. Training helped boost the local economy. Hotels in Reading, Pangbourne and Hungerford in particular benefited from the rapid turnover of guests. This computer-generated image was produced in 1997 by Hammersons, the development company responsible for The Oracle Shopping Centre. It shows how the area would look when the building work had been completed. Opened in 1999, the finished project is similar though not identical to the image shown here. The crystal blue skies, which give the scene a Mediterranean feel, do occur over Reading – though they can't be summoned at the flick of a computer switch! Construction of Reading International Business Park in South Reading is completed, and the biggest resident prepares to move in – global telecomms provider WorldCom, bringing 4,000 employees. Voice and data network giant Cisco Systems moves its first 300 staff to Green Park – the company's first step towards consolidating its UK operations. ICL's owner Fujitsu announces the British brand is to disappear: ICL's London Stock Exchange listing is cancelled amid redundancies and financial losses. Compaq is bought by Hewlett-Packard in a $25bn deal.

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Home working ahead of the crowd Reading's technology employers helped pioneer remote and flexible working before the internet. The culture of 'the DEC way' turned staff wellbeing into a management mission: the company worked to harness and retain talent. DEC's belief in personal responsibility meant managers trusted their people would not abuse the system. Technology made this mission a practical option. DEC had the computers, networking and know how to enable remote work. Sometimes events drove work from home: up to 500 staff at DEC's Basingstoke office switched to remote working after a fire gutted the building in 1990. Using a 'dumb' terminal at home, staff could connect to office computers on a dial-up phone line at speeds just fast enough to code or work on emails and documents. An informal work programme for technical staff in the 1970s became widespread practice 20 years later: up to 40 percent worked flexibly, spending up to two

days a week out of the office. ICL also dabbled: around 30 women building software for its 1900 ‘mainframe’ computer in the early 1970s were kitted out with access to a central computer from their homes. Decades of trade restrictions between the West and Communist Bloc countries ceased when the Cold War came to an end. Companies such as DEC were free to sell more openly to these new markets. Staff in Reading travelled extensively from the Baltic to Central Asia, opening offices, cutting deals and donating powerful internet servers to academic, research and government institutions. Higher-education hit Universities and researchers were early DEC customers because of its minicomputers’ performance, the ability to interact with them directly and their budget-friendly price. DEC gained a footing at Reading University with two physics department PDP-8s during the late 1960s and 1970s – the first used in early research with the Atomic Weapons Research Establishment at Aldermaston. As research demands grew, administration went digital and networking rolled out, the University moved to large mainframes from ICL and Amdahl, then PCs, BBC Micros and Sun Microsystems workstations during the 1980s. The last Amdahl mainframe was turned off in 1993. As the University developed expertise in meteorology and climate science, its computers leapfrogged into a global league of the biggest and most powerful systems – supercomputers from IBM. A combination of research expertise and computational power saw Reading win government- funded climate research projects that were recognised through a joint Nobel Peace Prize in 2007 and win Queen’s Awards in 2005 and 2021. Microsoft’s Thames Valley Park offices symbolised the rise of a new technology industry and a changing of the guard. Success of the PC fuelled Microsoft’s dramatic expansion with the company uniting its growing Reading team under one roof. TVP was built on land that was bought by DEC for its own expansion then sold to Microsoft. Picture credit: Creative Commons / Jan Šimečík Amazon releases its first cloud service in the US – internet storage. Its growing success attracts Microsof, Oracle and others based in Reading and beyond to follow with rival services. The UK’s most powerful academic supercomputer – millions of times faster than general-purpose computers – goes live at Reading University. The IBM system is built to support advanced research in climate change, medicine and finance. Apple releases the first iPhone: it redefines mobile computing and ignites the ‘app economy’ – using smartphone apps instead of websites for online business and leisure.

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Many roads to Reading People came to DEC Reading from a range of sources. The widespread use of DEC minicomputers in universities made them useful recruiting grounds for DEC, particularly for engineers. Other common sources were technology companies, government agencies such as the Atomic Weapons Research Establishment, Aldermaston, or even DEC customers. Competition to join was stiff: a single newspaper job advert could attract thousands of hopeful applicants. Some people took pay cuts to join, others enjoyed eye-popping rises. As technology evolved, DEC began to hire people in software, networking and consulting. The appetite to recruit was insatiable, even turning talented temps into career hires. What made people join? Word of mouth, experience of DEC, the excitement of working with computers, the thrill of joining a big American company – just some of the

reasons given. ‘Digital had the first choice of who they wanted to interview... there was a lot of banter at university about who would get jobs at Digital and I was one of the lucky ones.’ Ken Salmon, Essex University graduate, who joined DEC in 1974 and moved to Reading (DEC UK 60th anniversary oral history interview) Some parts of rural Berkshire lack the fastest internet speeds possible today because they are considered too difficult to reach for engineers to upgrade the phone network. Berkshire was one of five areas selected in 2023 to receive Government funding for CityFibre to install gigabit fibre to ensure the businesses, schools and homes in these areas can access the latest services. Picture credit: Mr Cable Limited Reading at night picture credit: James Singleton jsaerial.co.uk This is today’s Atomic Weapons Establishment. As the Atomic Weapons Research Establishment it used DEC computers to pioneer reliable ways of monitoring seismic signals to help enforce an international ban on nuclear weapons testing. Picture credit: Creative Commons / Vaneol Oracle buys Sun Microsystems – whose slogan is ‘the network is the computer’ – in a $7.4bn deal. Sun’s Blackwater Valley office is closed and staff moved to Thames Valley Park. DEC Park is demolished. Over 27 years it housed workers from DEC, Compaq and Hewlett-Packard – three of tech’s biggest names.

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From Isambard to infinity Reading Station’s 2014 redevelopment was conceived to position it for a future of continued growth and change. Isambard Kingdom Brunel’s station was handling 20 million passengers a year with 30 million predicted by 2030. It had become Britain’s seventh busiest station outside London and second only to Birmingham as a rail interchange. The £895m upgrade introduced new platforms and track layouts to help eliminate growing congestion caused by an increase in passenger numbers and freight services. Its capacity increased to four extra passenger trains an hour and six new freight trains a day, taking around two hundred lorries off the roads each day. More recent improvements have seen Reading’s direct connections to London reach beyond Paddington. The Elizabeth Line means engineers, executives and entrepreneurs based in Reading are now just 50 minutes away from customers, partners and investors in the technology and financial hubs of Old Street and Docklands in the east of the capital. Crossrail began building a new rail line between Reading and the east of London in 2009. Over 15,000 men and women worked on the project. Named in honour of the Queen, the Elizabeth Line was designed to provide more connections into central London. Broadband rollout in Berkshire has proved patchy: BT, government and local authorities respond with Superfast Berkshire – a multi-million- pound rollout of fibre to isolated locations to help connect the county. Release of container-based productivity tool by Docker. Containers help programmers and startups develop and launch a new generation of sofware from highly complex cloud services to the Internet of Things. Reading Station reopens following a major renovation, helping to connect local businesses to London’s growing tech sector. Thames Valley Science Park is announced – a 25-year development with backing from Reading University to nurture startups and small businesses.

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Reading's Digital Revolution is supported and brought to you in partnership with the following organisations: Reading Museum is grateful to the many individuals and organisations that have contributed to the Reading's Digital Revolution project. In particular, the following members of the project's steering group: Jacqui Garrard (Director of the National Museum of Computing), John Barrett (DEXODUS Chairperson), Peter Thompson and Sandy McKenzie (DEXODUS), Ian Severn and Leonard Klejnow (DECUS) and Annette Haworth (RGSpaces). We remember the late Terry Brenig-Jones who kindly took part. We wish to dedicate this exhibition to the memory of Tony Corbin, long standing secretary of DEXODUS who brought the idea to Reading Museum and was instrumental in developing the project from its early stages. Please donate to Reading Museum We hope you enjoy your visit to Reading Museum today. Using the power of technology please kindly scan this QR code and donate £5 to support our work. The exhibition's interpretation text was produced by Gavin Clarke at blendedpast.com The exhibition design was created by Barnaby Firth at cream-design.co.uk readingmuseum.org.uk/digital60

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Reading today is a powerhouse The diverse hi-tech community and culture left behind by DEC and ICL have sunk deep roots over the following decades, turning Reading into the UK's first high-tech cluster. Reading now links commercial connections in London with a network of business channels that radiate across Berkshire, the south-east and beyond. The town's status is thanks to a cycle of innovation and economic growth driven by Reading's big tech brands, startups and award-winning university. As 'digital' becomes ever more embedded in work and everyday life, a new cycle of reinvention is beginning. Station Hill Picture credit: Lincoln Property Company Above: The 42-acre Thames Valley Science Park is expected to be the biggest science and business park in the region – and one of the largest in the South East. It's hoped a combination of modern laboratory and flexible workspace in a campus setting will prove fertile ground for technology startups and growing businesses. Below: Green Park was another step in the journey away from the idea that businesses should squeeze into single-purpose office blocks around Reading's centre – a journey that began with construction of DEC Park 20 years before. The combination of Green Park's landscaped grounds, on-campus services and space for expansion has so far attracted around 60 companies. Photo © Chris Wood

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Reading at night picture credit: James Singleton jsaerial.co.uk From minicomputers to tech cluster Sixty years after John Leng began selling DEC minicomputers from an old bingo hall on Castle Street, Reading is the UK's third largest technology 'cluster'. It is behind only London and Manchester with just over 11,000 businesses and organisations in the tech sector. A decade ago, Information Communications Technology (ICT) overtook retail and wholesale to become Berkshire's biggest earner. Today, ICT accounts for 27 percent of the county's economy, with Reading's tech sector contributing significantly to this figure. By 2021, according to national census data, 12 percent of Reading's population were working in ICT. Reading's technology sector is dynamic, diverse and contemporary. The landscape

consists of tech firms in all shapes and sizes, involved in a vast range of interests including artificial intelligence, cyber security, 'Internet of Things', cloud-based services, business support, gaming, financial systems and medical technology. These cutting-edge businesses are attracting others, drawn by networking opportunities and a skilled local workforce. Behind this growth has been the comforting presence of banking and financial services, good transport – and a developing, high-speed digital infrastructure. Opened in May 2023, Reading Green Park is a new station on the Reading to Basingstoke line. It provides improved sustainable travel options for employees at Green Park business park and residents travelling into Reading and Basingstoke. The station also eases congestion on the A33 road to unlock growth potential to the south of Reading. Decades on from DEC's first office, the infrastructure needed to launch and grow a business in Reading has changed. Startup culture has seen fledgling companies seek more flexible workspaces – now abundant in town – to avoid the cost and commitment of taking on offices. Small and mid-sized firms in AI, cybersecurity and financial technology are now taking their place alongside multinationals. All change on the railway There's been no holding back the railway, which is now positioned for a cleaner and better-connected future. Rail provides a main artery to London with local links radiating out to sustain Reading's commercial ecosystem. Electrification, track and station modernisation, and new high-speed intercity trains mean Reading is equipped for faster and more frequent services. By the late 2010s, GWR trains were again breaking speed records into London. If anything's changed with rail, it's the vision. The GWR was created in 1840 for the straightforward purpose of fast transport of goods and people. Rail is now an element in planning and environmental agendas. Reading Station is at the heart of a town-centre redevelopment designed to integrate public transport. Further afield, GWR is experimenting with rapid-charging – battery-powered trains to replace diesel engines on local Thames Valley services.

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Data central in Reading The copper telephone lines and old exchanges that carried voice and early broadband are being replaced by a high-speed fibre-optic cable infrastructure. Reading's tech companies and customers rely increasingly on remote computer servers run by cloud-service providers to store, manage and process data. And it's Reading where some of these data centres are being located, drawn by its ample space and excellent transport links. At least two companies run major data centres in the town, serving financial firms in London and familiar names across the south-east of England. In a sign of the market's growing potential, Reading-based Amito was bought in 2022 by Pulsant, the UK's largest regional data-centre provider. Away from Reading, work continues to close the digital gap. Under the Government's Project Gigabit programme, CityFibre is installing full fibre to rural homes and businesses in Berkshire, Buckinghamshire and Hertfordshire. Digital-grade university Six decades after its first steps into computing, Reading University is investing £50m to digitise its services and facilities by 2027. Digital services for 27,000 students and staff are designed to help prepare for the future, reduce the university's carbon footprint and ensure it remains attractive to prospective students. Initiatives include updating student clearing processes, device loans to tackle digital poverty, and switching to cloud-

based computer systems. The programme runs alongside a £200m investment – as part of its centenary celebrations – into buildings and facilities to expand and improve sustainability. And the university has embarked on its biggest ever funding investment: a £30m, 15-year project on the feasibility of making accurate weather predictions up to a month in advance, a project designed to help communities, government bodies and business. To deliver this, the university is working with the European Centre for Medium-Range Weather Forecasts, the Met Office and the National Centre for Atmospheric Science. All work and some play The relationship between Reading's land and its commercial owners is evolving. A new focus is emerging that treats space as potential community places with opportunities for leisure. For example, Reading Green Park is set in 195 acres of landscaped grounds, including lakeside walks. Green Park railway station opened in 2023, offering greener access to the Park's businesses. Taking their place alongside technology businesses at Shinfield's Thames Valley Science Park (TVSP) are museums and creative industries. The British Museum, Natural History Museum and Royal Botanic Gardens are moving some of their world-renowned collections to TVSP. Meanwhile Shinfield Studios, with two of the UK's biggest sound stages, has opened to meet demand for global streaming media. The park is a major component of the 'South of the M4 Strategic Development Location' project. Local authorities, developers and Reading University are collaborating to create a space that's attractive to live in – not simply a commuter destination. The development will encompass housing, shops, schools and public transport connections to London and Heathrow. It also includes plans to improve local sports and leisure facilities. Urban Reading has been rethought too: new town centre offices are served by integrated public transport that includes the Elizabeth Line into central London. Picture credit: Shinfield Studios Picture credit: Creative Commons / ECMWF

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The office, but not as we knew it What comes next for Reading's famed abundance of office space? The office has long defined working life for many, but Covid saw just under half of Reading's employees work from home, changing expectations. The predicted exodus hasn't materialised but it's clear that office structure and functions must change radically. Information flow and communications need to improve for enhanced team knowledge sharing and collaboration. Business performance is at stake. The open-plan and egalitarian office workspaces of DEC look like returning – with a difference: offices must provide better quality space for improved staff wellbeing and environmental performance. With a skills shortage in tech, employers who fail to rethink the working environment risk losing candidates to rivals. Even Reading's flagship companies in the business parks and central offices must contemplate the implications. Trickle-down economy falters The economic impact of Reading's tech success hasn't been shared evenly across the town. Despite being home to some of the world's biggest technology names – and the investment that brings – Reading has some of England's most deprived neighbourhoods. Reading has the highest proportion of children eligible for free school meals in Berkshire. Government figures show that those receiving school meal support achieve lower GCSE grades. This is an economic – as well as social – issue for Reading. A lack of qualified and skilled young people means

firms are missing out on a more diverse local workforce. And while Reading remains affordable compared to London, salaries and house prices create challenges for public sector staff and other key workers settling in the area. Schools and access to healthcare played an important part in attracting tech workers with families to Reading. If these services cannot recruit, they risk decline – resulting in people moving elsewhere. Picture credit: Lincoln Property Company Picture credit: Jessica Brauner

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Future Outlook and Strategic Challenges founded on a thousand-year evolution: what's next for Reading, as the pace of digital accelerates change and we face shared challenges? AI impact? Debate about Artificial Intelligence (AI) in 2025 swings between its potential benefits and the threat to our existence. The truth will settle in between. AI may mean the loss of certain jobs but also the creation of new opportunities. The question is which jobs and what opportunities? Reading is no stranger to technological change. In the 1980s, DEC's ALL-IN-1 sounded the death knell for 'pools' of company secretaries who typed memos and letters. This audacious new software popularised workplace email, accelerating the possibilities for fast, efficient communication. As a new Labour Government echo Harold Wilson's 'white heat' of a scientific revolution, with talk of turning Britain into an AI superpower, Reading's tech companies may face stiff competition to recruit the experts needed to turn the town into a centre of excellence for AI development. Trading inequality for opportunity? Reducing wealth disparity will be an enduring challenge for Reading. Decades of high-tech business growth and planning initiatives have failed to erode the town's poverty and inequality levels, which are among the highest in the UK. This is not just a story of social division; it is one of wasted human potential. Reading businesses. community leaders and politicians will continue to work together to increase opportunities for social mobility. In the background economic and political leadership is changing, as Berkshire Local Enterprise Partnership sees its powers absorbed by the county's local authorities and the political pendulum is swinging towards a model of larger councils and even elected mayors. An evolving landscape? Land use and the built environment will continue to shape Reading's future. Large business parks designed to attract companies now need to be greener spaces, connected to the community via housing services and access to transport. Although it is no longer essential to have a geographical centre for the development of technological excellence, organisations still see the benefits of office-based time. Despite this, there remains a fear that town centre office spaces may be left empty. The appearance of Reading's town centre may not change as radically as in eras gone by. More high-density housing is likely to be built, as well as perhaps data centres and warehousing driven by ecommerce. New co-working spaces offer opportunities for remote working and making new contacts. While new buildings will introduce contemporary architectural styles, conservation and repurposing are now headline issues: don't expect too many of Reading's surviving red-brick facades to share the fate of the Metal Box. Expanded transport hub? Reading's development and future status as the beating heart of the Thames Silicon Valley will rely on maintaining and improving transport links. Reading Station is already built to handle 30 million passengers a year and provide faster journey times and

greater connectivity. Any possible future transport developments are dependent on external factors and political will. Could the railway networks expand beyond the south-east or link directly to Heathrow Airport? Or could a new bridge over the Thames improve road connections into Oxfordshire and ease Reading's traffic congestion? Online world meets reality? Reading, like the rest of the world, has had to meet the growing challenges of the internet and social media. The town's people continue to celebrate new frontiers in the virtual world – and navigate its hazards. These online environments were born of an optimism to share information and connect – and Reading companies played a leading part in their development. In 2025, that early optimism is qualified by concerns about identity theft, cyberextortion, grooming and other online crime, as well as the impact of misinformation and influencers on people, politics and society. It was once said that, online, nobody would know if you were a dog; today, that freedom of anonymity also means it's difficult to know whether the 'person' inciting you to action is really a friend or just a bot. The questions for all Reading people – from children, to parents, to community and local leaders – are: what is their relationship to these new voices and how should they respond? Can Reading capitalise on the flourishing opportunities for entrepreneurship and creativity provided by the evolving technology whilst keeping everyone safe from harm? New business transformation Reading's technology journey began with large corporations such as DEC migrating to the town – but its future may be smaller and more entrepreneurial in character. Where in DEC's time hardware was the focus for innovation, now young companies are focused more on software and data management solutions. Ideas and innovation can, and will, come from anywhere: and with the tools at the disposal of Reading's tech industry, progress from ideas to market-ready products should continue to accelerate. Meanwhile, global investment may open a greater number of financing opportunities for growing start-ups. Reading has done much to facilitate the businesses who drive this forward – and the future is all to play for. Tech Town Tomorrow Mural by Justin Eagleton (2025) justineagleton.com John Leng picture credit: Computer History Museum, California