SMART ENTERPRISE

DRIVERS 2022

Strategic Realities Reshaping the Smart Enterprise
SMART ENTERPRISE DRIVERS 2022

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EXC’S TOP 10 STRATEGIC SMART ENTERPRISE DRIVERS 2022

Digital Transformation is recreating business models, changing the way customers and employees function and altering whole industries. Social and business values surge when people, devices, and resources are connected. With the COVID-19 pandemic a further catalyst, organizations worldwide are embracing digital transformation to manage rapid organization-wide changes in support of business continuity, remote working, and dynamic service delivery.

Explore NEC’s Top 10 Strategic Drivers and discover how to navigate through these changes to simplify your organization, realize workforce efficiencies, and gain competitive advantages. Making sense of such disruptive changes has never been so important in order to transform smartly instead of being left behind.

As an Information and Communications Technology (ICT) leader with over 120 years of expertise and experience, NEC is sharing its views on leading and emerging trends and technologies to help your Smart Enterprise anchor its strategic investments. This means building and maintaining a solid yet flexible foundation capable of adapting to business change, delivering superior customer services and experiences, and enabling an increasingly mobile and secure work environment.

By embracing Digital Transformation and enabling advanced approaches to how Communications and IT services are delivered and managed, NEC provides new ways for Smart Enterprises to thrive and grow.

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DIGITAL TRANSFORMATION
INTEGRATION OF
DIGITAL TECHNOLOGIES
FUNDAMENTALLY CHANGES
HOW ORGANIZATIONS
OPERATE AND DELIVER
VALUE TO CUSTOMERS
DIGITAL TRANSFORMATION

LET’S GET DIGITAL

The integration of digital technology into all areas of an enterprise is fundamentally changing how organizations operate and deliver value to customers. It’s also a cultural change that requires flexibility and creativity in revisiting business models and operational processes.

Digital Transformation is key for enterprises to enrich their operations with innovative solutions that optimize business practices, drive workforce engagement, and create a competitive edge. It involves using technologies like cloud computing, Internet of Things (IoT), data analytics, mobile internet, artificial intelligence, voice recognition, and application convergence to remake workflows to become more efficient, smooth, rich, effective, and secure.

HYPERAUTOMATION IS KEY

The COVID-19 pandemic has taught us that automation and digital adoption is indispensable for organizations to survive as well as being the key to operational excellence. To realize this, organizations need to automate tasks and processes, and orchestrate automation across functional areas to ensure business workflows are digital.

Hyperautomation is an approach to identify and automate as many business and IT processes as possible to support scalability, remote operation, and business model transformation. Investments in hyperautomation technologies include data science and machine learning platforms, Artificial Intelligence (AI), and robotic process automation (RPA).

EMPOWERING A DATA-DRIVEN ENTERPRISE

The power of capturing, processing, and analyzing data offers enterprises a tremendous opportunity to digitally transform every aspect of business, spanning how they engage with their customers, empower their employees, optimize their operations, and design their products. In doing so they adopt digital-first, remote-first business models.

As enterprises rely more and more on data, the reliability of that data increasingly becomes a crucial factor. To ensure the integrity of their data, organizations will need to validate it, manage processes to protect critical data, ensure it is safely stored as well as swiftly retrievable.
ANYWHERE OPERATIONS FOR AN OMNIPRESENT WORKFORCE

Making staff omnipresent and ‘always on’ is key for smart enterprises to operate efficiently and effectively in today’s business environments. Organizations are capitalizing on mobility solutions that enable employees to work from just about anywhere, at any given time whether on-site, at home, between appointments, or while traveling. Technology advances ensure they remain fully integrated with their organizations, colleagues and customers, as well as with their social networks.

MOBILE FIRST

Mobile technologies continue to drive innovation and new services, extending communications, data, and business applications to all mobile devices. Work/life balance is enriched by the power of the smartphone, serving both business and private communications and making it the favorite tool - not only for today’s workforce but across all generations.

Smartphones and tablets have become the standard form factor for developing portals and business apps. Voice recognition and voice activation will be increasingly deployed because of their ease of use, speed, and safety for people on the go. 5G and LTE connectivity will transform laptops into ACPCs (Always Connected PCs) to also ensure the more processing power consuming tasks can be performed anywhere on the go.

5G IS THE NAME OF THE GAME

5G and Wi-Fi 6 technology will drive factors in wireless growth, bringing increased bandwidth and higher internet speeds along with more reliable networks. It will change the way we interact on the internet. Besides a further stimulus for the growing need and demand for the use of video, it will also open doors for complex applications that rely on realtime access to Big Data conducted in the field.

Objects containing embedded technology that sense and interact with their environment (Internet of Things) – such as autonomous drones and driverless vehicles – enable detailed insights and swift decision making, which all will be facilitated by these advances in wireless technologies.
UBIQUITOUS CONNECTEDNESS
MOBILE TECHNOLOGIES CONTINUE TO DRIVE INNOVATION FOR THE OMNIPRESENT AND ‘ALWAYS ON’ GENERATION
The pandemic has made companies abandon the 9-to-5 workplace and discover how flexible the workplace can be. The traditional office is shrinking and working from home is fully accepted. Hybrid work has become the preferred model and make tools that support a more flexible, open and agile way of working, like Unified Communications & Collaboration (UC&C), a mandatory part of running a successful business. It is not only more safe, convenient, and cost-effective, but in many cases also proves more productive.

2022 will see more investments in technologies that allow distributed workgroups to communicate and collaborate easily, regardless of location.

Connected workspaces allow disparate teams to work together in real time and enable individuals to interact efficiently and effectively with colleagues, clients, and suppliers, eliminating the need to travel.

They are dynamic, flexible, and user-centric, and provide easy access to tools such as click-to-call and conference capabilities, file sharing, and digital white-boarding, driving productivity and reducing latencies across organizations.

Smart Workspace embed these capabilities within business workflows to form an open and flexible workflow platform with application integration that goes far beyond communications. Smart offices provide touchless access control, integrated environmental control, digital signage, motion sensors, people counting, desk and room scheduling, and voice activation in support of the ‘New Normal’.

Hybrid working being the new normal workstyle urges distributed enterprises to keep remote workers engaged, motivated, and included in the company culture. Companies will embrace video as a way of bringing context and depth to conversations. Using video conferencing for daily check-ins strengthens the feeling of being part of the office community and of being a valued member of a team working to achieve the company’s goals.

Application Convergence offers employees all applications integrated through a Single Pane of Glass. Blending frontline and knowledge worker capabilities gives contact center agents easy access to subject matter experts and other staff functionality that wasn’t typically available to them such as screen pop, data retrieval, and recording.
FROM EXPERIENCE TO ENGAGEMENT

ENHANCING TOTAL USER EXPERIENCE

The battle among enterprises for tomorrow’s customers is fought and won on customer experience. Companies are pushing hard to deliver connected Customer Experiences (CX) across channels, processes, and departments – making contact easy and pleasant, lowering thresholds, presenting options most relevant to the customer, and ensuring swift response to queries.

But also within an organization new tooling is introduced to enhance the Employee Experience (EX) for better business outcome. Applications and workflows become user-centric instead of device-centric, tools become intuitive, and interactions swift and simple.

REINVENTING ENGAGEMENT MODELS

Smart enterprises reinvent their customer engagement models to deliver customers a unique, personalized experience and ensure a long lasting relationship. The power of social networking is driving organizations to integrate it into their business processes. Realizing that CX includes every touchpoint a customer has with an organization, makes collecting and logging all customer data across all sources essential in order to present a customer’s track record during e.g. an agent’s conversation.

Workflows with access to contextual information provide smarter employee experiences and productivity. With the future revolving around hybrid work makes companies also look for ways to fuel team engagement, with tools for creative collaboration and video to bring context and depth to interactions.

SMART DATA DRIVEN PERSONALIZATION

One of the keys to customer engagement lies in closely matching human behavior, which will more and more be supported by applying predictive analytics to gathered customer data and create personality profiles that match the personality of customers.

Smart personalization engines that recognize customer intent will enable digital businesses to flourish. Artificial intelligence tools step in to build profiles of large customer sets and allow computers to understand the true meaning of voice, including tone, sarcasm, pun, and even deeper context clues like double meanings. They measure behavioral cues, intentions, and emotions to create accurate profiles that can be mapped to individual customers and prospects.
DYNAMIC DELIVERY AS A SERVICE

DEPLOYING AS A SERVICE MODELS DRAMATICALLY REDUCES CAPEX INVESTMENTS IN EQUIPMENT, SPACE AND RESOURCES
DYNAMIC DELIVERY
AS A SERVICE

INSTANT GRATIFICATION
The current ‘On-Demand’ generations do not expect, want to, or have to wait for anything. They acquire information, products, and entertainment instantly, on demand. The world is at their fingertips and they engage in real-time to get what is needed. Not necessarily to own, cherish, or maintain, but to use and experience without further hassle. Accustomed to immediate accessibility they force businesses to be agile and responsive, changing business dynamics dramatically. Enterprises themselves are increasingly embracing On Demand procurement strategies to lower costs and increase flexibility.

CONSUME WHAT YOU NEED – PAY FOR WHAT YOU USE
Modular services, pay per use and flexible deployment models are allowing businesses to invest in just what is needed now, trimming up-front costs, and leaving options open for future expansion. Smart enterprises align their resources with their present business requirements taking advantage of Cloud solutions that are scalable and offer a pricing tier that charges only for the resources used.

Deploying As a Service models reduces CapEx investments in equipment, space, and professional resources, while it allows an organization to focus on its core expertise and activities. In 2022 Everything-as-a-Service (XaaS) will gain even more momentum, in even the most hardware-driven industries and sectors of society.

PROGRAMMABLE INFRASTRUCTURE & COMMUNICATIONS
Equipment, functions and processes are becoming more and more software driven, making network elements programmable and dynamic to respond quickly to changing requirements. Composable infrastructures enable IT departments to provision workloads quickly and efficiently, while still maintaining control over the infrastructure that supports mission-critical applications.

Programmable Communications enables companies to embed voice, messaging, video, and authentication capabilities into business applications and workflows via simple-to-use APIs. This provides an excellent foundation to quickly, easily, and seamlessly integrate new services, without hindering users.
Cloud computing has revolutionized IT and software systems delivery. With applications running in the cloud makes it incredibly easy for users to signup, access, and draw on solutions available on demand and within minutes. Moving IT & Communications provisioning to cloud platforms – be it in a public, on-premises, or hybrid model - helps organizations reduce risk, reduce costs, increase revenue and customer experience.

Secure cloud communication and collaboration services allow organizations to abide by homebound safety measures and enable employees to keep working and customers engaged wherever they are.

Cloud-based deployments can adopt new technologies much faster and more easily than their on-premises counterparts, with new functionality and applications driving rapid innovation.

New technologies including Serverless computing and Edge computing combined with AI and the Internet of Things (IoT) are reimagining the possibilities of the cloud.

Edge computing will help IoT systems to significantly lower connectivity costs and reduce bandwidth requirements, which in turn will boost the widespread instant availability of services and insights across businesses and society.

The trend to hybrid and multi-cloud models continues. While enterprises shift more workloads to the public cloud, other tasks are preferably located at the edge or on premises, either for more control and security, or lower latency. There too remains a strong demand to leverage existing infrastructure with incremental, flexible technologies that are compatible and easy to adopt. The bottom line is that most companies need some sort of hybrid solution.

Distributed cloud is where services are distributed to different physical locations, while the operation remains the responsibility of the public cloud provider. To have these services physically closer helps reduce latencies, reduces data costs, and helps also privacy regulations that require certain data to remain in a specific geographical location.
HOLISTIC BUSINESS CONTINUITY
TODAY’S ENTERPRISES REQUIRE A ROBUST IT INFRASTRUCTURE TO ENSURE APPLICATION SECURITY AND ALWAYS-ON AVAILABILITY
ENSURING DATA SECURITY

THE AGE OF IT AND DATA DEPENDENCE

The power of capturing, processing, and analyzing data offers tremendous opportunities to drive better business intelligence, product development, and customer service. Organizations are investing in technologies that enable intelligent data and analytics capabilities. These include artificial intelligence (AI) cloud services, AI IT operations (AIOps) platforms, and data science and machine learning platforms.

The ubiquity of IT systems and our dependence on them make cyber security a key topic. This year the World Economic Forum identified cybercrime as potentially posing a more significant risk to society than terrorism. Organizations can be exposed to digital threats in various ways and need to capitalize on all technologies, processes and practices designed to protect networks, devices, programs, and data from attack, leakage, damage, or unauthorized access.

MANAGEABLE STORAGE SOLUTIONS

As data sets grow, organizations face numerous challenges with respect to their storage solutions and backup systems. Storage solutions need to become more flexible and scalable as organizations find it increasingly complex to store, protect, and manage all collected information. They will intensify focus on simple manageability as well as ensuring excellent reliability. Real-time business processes and workflows will also require swift retrieval of data at the moment of need.

PROTECTING DATA WHILE IN USE

Embedding work from home in company operations, creates a greater need for data security management during online collaboration. Privacy-enhancing computation protects data while it’s being used and is designed for the increasing need to share data while maintaining security and without sacrificing confidentiality. Secure access service edge (SASE) is expected to deliver secure end-to-end networking and security services in a consistent and integrated manner to support the needs of digital business transformation, edge computing, and workforce mobility.

Quantum communications takes advantage of the laws of physics to protect against eavesdropping by means of quantum cryptography. Blockchain technology provides a new model for transactional exchange that allows individuals and institutions to exchange value without traditional intermediaries, preventing malicious acts during data transfer.
Today’s high performance enterprises depend on reliable access to tools, information, and people to persistently operate smartly and compete effectively. This requires a robust communications and IT infrastructure capable of providing always-on availability that can also self-heal should potential service disruptions occur.

Hardware- and software-based fault tolerant solutions that deliver five nines (99.999%) uninterrupted service guard against outages without compromising performance. Virtualized infrastructures improve business continuity and protect mission critical applications through system-level fault tolerance. Lock-step fault tolerance and geo-redundancy technology protect critical data and ensure business operations.

With the rapid growth of quantified and digitalized data and increased volumes of data flowing across networks and between devices, the risk of data leaks and breaches makes fail-proof security essential. In addition, inaccurate, manipulated, and biased data that leads to corrupted business insights and skewed decisions can have a major impact on business and society. Unverified data therefore becomes a new type of vulnerability.

The upsurge of remote working makes it all the more urgent for enterprises to ensure IT infrastructure and application security when allowing staff to adapt and integrate collaboration capabilities into their workflows.

COVID-19 has confronted the world with unprecedented supply chain disruption and shortages. This has made it clear that navigating future disruptions calls for a more holistic and proactive strategy, including closer collaboration between suppliers and customers than in the past.

Choosing the right disaster recovery strategy is a key investment in the future stability of every organization. Smart enterprises build security into all organizational processes, with business and IT management working together to protect data and applications from hardware, Operating System (OS), and application failures due to malicious and natural disasters. End-to-end disaster recovery and readiness for fast data and application recovery must be a top priority regardless of organization size.
AUGMENTED INTELLIGENCE
WITH AI AD-HOC COMMUNICATIONS HAVE EVOLVED INTO MEANINGFUL EXPERIENCES
AUGMENTED INTELLIGENCE

AUGMENTED ANALYTICS – FROM DESCRIPTIVE TO PREDICTIVE

The pandemic and its social impact have illustrated the need for instant and accurate insight into the state of affairs. High frequency or fast data provide insights as to e.g. the move towards homeworking based on changes in electricity and water consumption, the intensity of a virus based on sewage data and traffic movements, and the actual density of people based on mobile phone activity. While analytics tools so far focused on descriptive outcomes, their application moves towards making predictions about future events and behavior, and recommendations on how to take advantage or react to outcomes.

INTELLIGIZATION – FROM DECISION TO CREATION

Artificial Intelligence (AI) and machine learning enable systems that are self-educating, self-healing, and proactive. Autonomic systems learn from their environments and dynamically modify their algorithms to optimize their behavior. Generative AI learns about artifacts from data and can create new forms of creative content, such as video. Conversational AI technologies such as bots and virtual assistants are opening new service-delivery channels.

In 2022, AI tools become widely available through cloud platforms and open-source software with adoption across all industries, i.e. government, healthcare, retail, manufacturing, and finance. Developers at midsize companies will start using off-the-shelf AI technology.

While Artificial Intelligence suggests automation to substitute human involvement, Augmented Intelligence focuses on enhancing rather than replacing it. It enhances processes, from optimization to decision making. Businesses will ramp up its usage, drawing on elements such as emotion recognition and behavior analysis.

EXTENDED REALITY

Companies are experimenting with virtual reality (VR) and augmented reality (AR) to expand both real-world and virtual surroundings of users and keep customers and employees engaged in a virtual environment.

Extended reality (XR) combines real and virtual environments with human-machine interaction, extending human experiences relating to the senses and the acquisition of cognition. Projecting computer-generated imagery into a user’s field of vision, superimposes it over what the user is viewing in the real world. It changes how we perceive the world and delivers on its promise: the end of distance to information and the end of distance to experiences. As the cloud and AI gain traction, another world is emerging, namely the Metaverse, a digital environment providing immersive experiences driven by AR and VR and supported by avatars and the like.
DIGITAL INCLUSION

A WORLD RECREATED

New businesses and social habitats are emerging from the organic linkage of people, physical things, and processes, spurred by IoT and AI. Important steps are being made towards building smarter societies – where information and communications technologies play a vital role in ensuring energy efficiency, sustainable economic development, safety and security, along with wise management of natural resources.

We can expect to see XR assisting in tackling challenges posed by the current world situation with education and healthcare solutions enhancing learning and wellbeing. Medical examinations, diagnosis and even operations can increasingly be carried out remotely.

A BRIGHTER FUTURE FOR ALL

The COVID-19 pandemic has shown how important digital connectivity is in situations where physical presence is not possible. Virtual and augmented reality technologies are removing the distance between people, information, and experiences, transforming the ways people live and work.

The United Nations has identified the internet as a basic human right for all citizens of the world. This includes affordable, robust broadband internet service, devices and access to online content to enable self-sufficiency, participation, and collaboration.

As technology advances, digital inclusion will encourage all people to participate in society and feel more valued, offering more potential for individual abilities to bloom and realizing a brighter future for all.
ABOUT NEC CORPORATION

NEC Corporation is a leader in the integration of IT and network technologies that benefit businesses and people around the world. By providing a combination of products and solutions that cross utilize the company’s experience and global resources, NEC’s advanced technologies meet the complex and ever-changing needs of its customers. NEC brings more than 120 years of expertise in technological innovation to empower people, businesses, and society.