Technology Trends for 2024

A look ahead at expected technology trends for 2024

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Introduction

With over 30 years' experience in business communications, IT and cyber security, MPS Networks MD Tim Docker has seen many technologies emerge, flourish and become superseded. This document summarises Tim's thoughts around anticipated technology trends in 2024, as well as the potential, associated opportunities and risks.

Cyber threat events

Cyber threat events are liable to increase in volume as well organised cyber criminals extend their reach by recruiting more franchisees.

Hopefully, hackers' success rates will fall as they encounter more robust, managed defences including next generation firewalls, email protection, multi-factor authentication and endpoint antivirus solutions as well as better trained people, aware of phishing attacks, social engineering, and other security threats. The Human Firewall is the most critical line of defence.

Continuous threat exposure management (CTEM)

Continuous threat exposure management (CTEM) is a pragmatic and systemic approach that allows organisations to evaluate the accessibility, exposure and exploitability of it's digital and physical assets continually and consistently. Aligning CTEM assessment and remediation can reduce vulnerabilities, including un-patchable threats. Cyber Essentials (CE) is a UK Government backed scheme/accreditation designed to protect organisations of all sizes from the most common cyber-attacks, which would almost certainly be part of any CTEM in the UK.

Adoption of CTEM and CE is increasing. CE is a prerequisite for an increasing proportion of UK Government, Public and Private Sector contracts and Gartner predicts that, by 2026, organisations prioritising security based on a CTEM program will benefit from a two-thirds reduction in breaches. CTEM and CE can also be required to satisfy general and industry specific compliance, and cyber security insurance requirements.

Data Breaches, Ransomware demands and settlements

Data Breaches, Ransomware demands and settlements are also liable to increase. Despite recent deployment of more robust defences and CTEM, as alluded to above, we believe preventative measures remain inadequate relative to the prevailing threat level in general, and especially in the SME sector.

In any event, there are no cyber defences which are 100% secure and a concerning proportion of businesses do not have a remote data backup which is not physically connected to and/or electronically accessible from the primary data source (air-gapped backup).

In summary, we believe increased breach attempts will result in more data theft and encryption, in turn resulting in more frequent ransomware settlements, as hackers encrypt data backups which are not air-gapped, such that the only way to facilitate recovery, is to pay up.

Cloud Infrastructure

Cloud Infrastructure can reduce dependency on local infrastructure such as servers and telephone systems, providing enhanced functionality (including flexible working), futureproofing, resilience, redundancy, reliability, disaster recovery and business continuity.

Unsurprisingly, we have seen exponential growth in this area in recent years mainly around the use of Microsoft 365, Azure, AWS and proprietary hosted Cloud Business Telephony platforms. Demand to move on-premises file storage to SharePoint in Microsoft 365 or Azure was unprecedented in 2023. These trends are liable to continue and can also address certain sustainability concerns in the ESG space.

Industry Cloud Platforms (ICPs)

Industry Cloud Platforms (ICPs) are a form of Cloud Infrastructure which address industry-relevant business requirements, providing software, platform and underlying infrastructure as a service, in a remote/cloud environment as a holistic product offering.

ICPs are tailored cloud solutions specific to an industry and can be further tailored to an organisation's needs. Whilst Gartner predicts more than 70% of Enterprise will use ICPs in 2027, up from less than 15% in 2023, we are seeing significant take-up in the UK SME Sector.

Cloud Infrastructure tailored for industry specific requirements is compelling.

Artificial Intelligence (AI) & Machine Learning (ML)

Artificial Intelligence (AI) & Machine Learning (ML) are almost certainly the most reported and commented upon technologies of 2023. This will almost certainly continue to be the case.

Whilst AI and ML have featured in next generation firewalls, email protection, multi-factor authentication and endpoint antivirus solutions for some time now, monitoring activities and threats, learning and responding appropriately and autonomously, it's Generative AI (GenAI) which is newsworthy.

GenAI applications can make vast sources of information available to everyone and large language models will enable businesses to connect their workers with knowledge in a conversational style with, ostensibly, rich semantic understanding. A powerful proposition in a World where talent shortage is regarded as a damaging risk in many organisations. Rapid ongoing adoption is predicted.

Significant risks associated with the use of knowledge with "ostensibly, rich semantic understanding" and otherwise, will need to be properly controlled; hence AI Trust Risk and Security Management (TRiSM). AI TRiSM provides data protection, security, and risk controls for inputs and outputs from/to third-party models, applications and data/content, without which the use of GenAI models can have negative effects and spin out of control.

Gartner predicts that by 2026, organisations that apply AI TRiSM controls will increase the accuracy of their decision making by eliminating up to 80% of faulty and illegitimate information, and we feel that adoption without robust TRiSM would be less than prudent.

UK 3G Mobile Network Switch Off

UK 3G Mobile Network Switch Off has commenced, with Mobile Network Operators (MNOs) beginning to retire 3G networks to make room for more advanced and efficient 4G and 5G technologies. Each mobile provider is setting its own timetable for its 3G network switch-off. These timings might change, but current plans for the main mobile network providers are EE and Vodafone by January 2024, "3" by end 2024 and O2 during 2025. 2G Networks will remain available until further notice, but will be switched off by 2033 latest.

Users should ensure devices including handsets, telecare alarms, security alarms, ATM's, payment terminals and any other connected equipment, and the SIM cards they contain, are not reliant upon 3G.

Mobile Tech Trends in 2024

Mobile Tech Trends in 2024 are likely to include:

Wider availability of 5G - faster download speeds and lower latency, paving the way for applications like augmented reality (AR), virtual reality (VR), and high-quality video streaming on the go.

Foldable Displays - In 2024 major manufacturers are set to launch devices with foldable displays, providing users with unprecedented flexibility and versatility. Whether it's a device that unfolds to reveal a tablet-sized screen or one that rolls up for easy portability, these innovations will offer a glimpse into the future of smartphone design, which will include more eco-friendly materials and energy efficient components.

Artificial Intelligence - smarter virtual assistants, AI-driven photography enhancements, more intuitive personalised experiences, improved voice recognition and biometric features such as fingerprint recognition and facial scanning.

Health & Wellness Tracking - including improved heart rate tracking, sleep analysis, and stress detection. As users become more health-conscious, smartphones will play a crucial role in providing real-time insights into their well-being.

PSTN/ISDN Switch Off (related to telephony)

PSTN/ISDN Switch Off is scheduled for end December 2025 by BT Openreach (BTO). Most UK businesses have already migrated to SIP trunk connections to onsite PBX (telephone systems) or, to a greater extent, (CBT) Cloud Business Telephony.

SIP trunks and CBT provide enhanced functionality when compared to PSTN/ISDN lines and legacy PBX, including vastly improved call routing, reporting, flexible working, disaster recovery and business continuity capabilities, as well as free calls to UK destinations. That said, upgrading an old PBX to work with SIP trunks or migrating from an old PBX to CBT would probably increase direct telephony costs for businesses still using these old PBX, and the enhanced functionality available may not always translate into perceived business benefits.

Hence, these businesses continue to use these legacy systems and may continue to do so for the time being, unless they wish to add more or relocate PSTN/ISDN lines which may not be allowed by BT Openreach. Increased ISDN pricing and deterioration in support for ISDN services, which are typically not the subject to robust SLAs, might alter the position for legacy system users.

PSTN Switch Off (related to internet connectivity)

PSTN Switch Off is, again, scheduled for end December 2025 by BT Openreach. Until recently all shared/rate-adaptive/asynchronous internet connections (Broadband) have worked in conjunction with a PSTN line. Hence, users tend to receive two charges for a single internet connection; one for the PSTN line and one for the Broadband.

Broadband is "shared" in that bandwidth at the relevant BT Exchange is allocated to several users, and so speeds reduce as more users become active. Broadband is "rate-adaptive" in that the further the user's premises are from the relevant BT Exchange or pavement box the slower the speed. Broadband is "asynchronous" in that maximum downstream speeds are many times higher than maximum upstream speeds.

Broadband which requires a PSTN line to work includes ADSL and FTTC, which are now considered legacy technologies. ADSL and FTTC are being proactively phased out by BT Openreach and Internet Service Providers, in favour of FTTP (Fibre to the Premises) and SoGEA (Single order general ethernet access). FTTP and SoGEA do not require a PSTN line and will both, therefore, survive the PSTN line switch off.

Migrating from ADSL/FTTC to FTTP/SoGEA once these services become available to users can provide commercial and speed benefits, whilst they are Broadband and, therefore, shared, rate-adaptive and asynchronous.

Where FTTP is available to a user it will be the only Broadband service available for new orders. Where FTTP is not available new orders will be satisfied by SoGEA. All subject to availability of these services of course, which will increase between now and the end of 2025.

Dedicated Internet Circuits

Dedicated Internet Circuits are known as Ethernet and are currently delivered as 100MB, 1GB or 10GB circuits.

Bandwidth is dedicated as opposed to shared, and the circuits are not rate adaptive or asynchronous. Hence, a 100MB circuit will always deliver 100MB upstream and downstream, as well as quality of service for voice/video and robust service level agreements. Ethernet is often referred to as Business Grade connectivity and will remain available indefinitely.

Healthcare Sector (General Practice)

Healthcare Sector (General Practice) will benefit from an intensive roll-out of NHS Advanced Telephony Better Purchasing Framework compliant Cloud Business Telephony Solutions, which commenced in 2023.

This advanced telephony provides enhanced functionality designed to support practice resilience and flexibility and improve patient experience and outcomes including auto-attendant, call queuing, position in queue, automatic callback option, reporting and clinical database integration.

The framework allows commissioners to procure cloud-based telephone systems from a number of accredited telephony suppliers on the framework list.

This list is made up of assured suppliers against the Better Purchasing Framework requirements. These suppliers have signed NHS England's Digital Care Services Catalogue agreement and have also agreed to adopt the NHS terms and conditions for practice contracts.

[Click here to access the full list of providers](#).

The framework offers commissioners full procurement support including requirements identification, pricing classification, exit fee negotiation, contract drafting and finalisation and issue resolution with suppliers. These services are funded by NHS England and are made available to support general practices, primary care networks and integrated care boards at no cost.

About MPS

Founded in 1991, MPS designs, delivers and supports IT, cyber security, voice and data solutions for SME, Enterprise, Healthcare and Education clients throughout the UK.

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