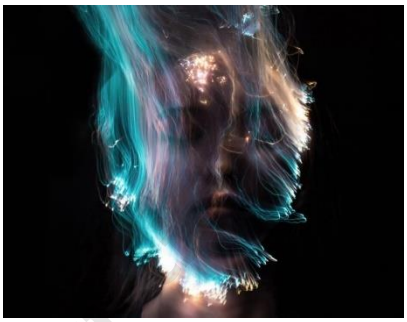
www.pipelinepub.com
Volume 22, Issue 8

The AI-Driven Digital Transformation Framework for the Next Decade

By: Paula Zimmerman - Pipeline



Artificial intelligence is no longer a novelty and is steadily becoming the driving force of next-generation automation. The global connectivity industry is shifting from small-scale applications to native integration frameworks that deliver tangible business value. Operators now recognize that meaningful digital transformation to become a TechCo requires strong internal software capabilities and unified data architecture, not dependence on closed external ecosystems.

In an exclusive interview with *Pipeline* Magazine, Tymoteusz Wrona, Chief Strategy & Operations Officer at Comarch Communications, explains that true transformation is most successful when operators organically develop their engineering culture and focus on agile methodologies. According to Wrona, this strategic shift allows AI to seamlessly become a tool for investment optimization and new business models, rather than just a passing tech trend. To prepare for the future, organizations must go beyond surface-level AI use and build it into their core systems.

Securing the digital foundation with sovereign AI

The industry is recognizing that using general-purpose AI models for everything is no longer a viable solution as digital sovereignty becomes a priority. For operators, especially those providing mission-critical connectivity, relying on AI models controlled by a foreign provider poses a significant security risk. As a result, many are prioritizing AI solutions hosted, governed, and operated within trusted national or regional jurisdictions. In more advanced cases, operators are also exploring Domain-Specific Language Models (DSLMs) trained on specialized network data to ensure maximum data protection and deliver more precise, context-aware responses.

Tymoteusz Wrona emphasized that achieving high levels of autonomy is an evolutionary process best realized by gradually and organically developing algorithms on proprietary, specific network data. Because DSLMs understand the network's complex structure, including spectrum optimization strategies and cell-site density planning, they are less resource-demanding and far more precise than general LLMs. As Wrona points out, by automating individual domains step-by-step, technical teams can gain valuable hands-on experience, allowing technicians time to gradually learn to work with AI and build trust in its decisions.

The biggest advantage of sovereign artificial intelligence is that it ensures that operators' most sensitive intellectual property is never harvested to train external, global models. Implementing abstraction layers additionally allows operators to easily switch models and maintain steady operations, regardless of shifting geopolitical tides.

Implementing explainable autonomous operations

To achieve autonomous operations, having naturally sounding chatbots is not enough. They may sound human and even propose solutions, but they cannot resolve technical issues on their own, at least not for now. What operators need are AI agents that can directly access core network systems, such as billing and product catalogs, to solve complex problems and ensure maximum network efficiency. Naturally, using systems whose logic cannot be verified and audited is a significant operational risk, especially for mission-critical systems where every decision has significant consequences.

To trust these autonomous agents, technical directors are demanding explainable AI (XAI), agents that provide a transparent decision lineage for every automated action taken on the network. When an algorithm reroutes a packet or reconfigures a tower, the entire process must be completely transparent and understandable for engineers to audit the logic in real time.

With AI that can be verified at every step, we can trust it with access to core systems. But how to ensure it knows what results we expect of it? This level of reasoning is achievable by feeding AI with comprehensive knowledge graphs and multi-domain topologies that serve as clearly organized databases, enabling agents to understand deep intentions and operational goals. Using those guidelines, agents can execute complex self-healing actions without human intervention while ensuring satisfactory outcomes.

Infrastructure decoupling and the integration of space

The traditional integrated operator model is becoming obsolete as companies recognize the financial efficiency of layered business architecture. Function decoupling divides the industry into specialized entities, optimizing capital allocation for advanced research and deployment. Within this new structure, tower companies (TowerCos) are evolving from passive infrastructure providers to active utility managers and green energy hubs, using renewable energy to ensure network uptime. Meanwhile, network companies (NetCos) operate as neutral wholesale utilities, offering guaranteed performance tiers to specialized healthcare and industrial markets. Finally, agile service companies (ServCos) complete the ecosystem by focusing on software branding and customer experience, without significant capital requirements.

At the same time, the industry is integrating non-terrestrial networks as a standard layer of connectivity. Soon, the new standard will be satellites working alongside terrestrial infrastructure, creating a system where multi-orbit space-based connectivity becomes an everyday part of the user experience, managed through the same orchestration platforms that handle ground-based fiber and cellular assets. Clients soon will not even notice the switch between a regular 5G network and a satellite network.

Exporting telco-native automation to other industries

Telecommunications services have always been complex, and connectivity providers require specialized multi-attribute pricing models to charge for them and prevent fraud. Today, these advanced models are being adopted by other industries that have grown in complexity, such as electric vehicle charging networks that replicate mobile roaming structures, or electricity providers that need to account for clients who not only consume energy but also produce it with

solar panels and inject it into the grid. The same is true for subscription-based highway tolling or usage-based logic that replaces flat fees for logistics.

This shift presents a massive opportunity for technology vendors who can adapt their telco-grade products for cross-industry use. Tymoteusz Wrona highlighted how transitioning to a modern, cloud-native architecture based on microservices and open APIs effectively eliminates legacy technological bottlenecks. This IT flexibility drastically reduces Time-to-Market for new products from months to mere minutes, unleashing the network's full monetization potential.

Wrona further explains that systematic, end-to-end process automation opens the door to Zero-Touch Provisioning, which allows operators to realistically and profitably monetize advanced 5G capabilities, such as dynamic network slicing for the industrial sector. By leveraging this approach, software vendors can offer their billing systems and IoT ecosystems to handle cross-industry billable events far more efficiently than legacy solutions, enabling B2B2X operators to consolidate all personalized, multi-industry offers into a single invoice with ease.

The pillars of future-proof digital transformation

Moving forward, companies need to focus on deep integration and avoid surface-level technological solutions. Achieving true network autonomy depends on transparent autonomous agents operating within a sovereign digital environment. Operators should implement this technology gradually and with a clear roadmap in mind, prioritizing independence and transparency in their intelligent systems.

At the same time, focusing on universal architectures can generate new sources of income and investment diversification, as industries need sophisticated software for smarter billing and operational processes. AI-oriented digital transformation becomes a must for organizations wanting to thrive in the next decade, but as Tymoteusz Wrona concluded, it’s ultimately about how this technology is organically used and implemented to support pragmatic growth, not just how fast the algorithms are.