From Telco to TechCo and Beyond

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(Managed) Services

LEWISINSIGHT

Getting closer to customers, partners, applications and outcomes with new generation of Amdocs Managed Services

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Introduction

This paper examines the evolution of communication service providers from 'Telco' to 'TechCo' organizations, the key reasons which led to this fundamental change and the implications for the telecom industry. And while this phrase (Telco to TechCo) has various interpretations, we would like to refer to it as the shift from being a legacy IT based service provider, to becoming a Digital Service Provider (DSP).

Market background

Whatever label gets attached to the telecoms industry it is clear connectivity is critical to every aspect of our personal, business and societal lives.

The dynamics of the telecoms market are shifting from internal technology dynamics and how that technology, shaped into simpler, more flexible products and services, can be built into the broader digital ecosystem. No longer is the purpose of telecoms just to connect from one point to another, but it is linking all of the elements in the new digital ecosystem, allowing new permutations of technology to support applications and services and of course, new business models.

Former discussions about how cellular and fixed services relate or compete are replaced by how third parties can build more value on the top of this more ubiquitous, reliable connectivity. Making it easy for customers to find the best service for their needs and for business partners to build the right connectivity into their emerging solutions.

In addition, , competition from fellow connectivity providers along with changes in the adjacent ICT markets mean that the total revenue pool flowing into telecoms is relatively flat. No big new revenue streams are raising their heads so building this new environment has got to be done more economically than in the past which entails reducing complexity and boosting levels of customer service to reduce churn and give an opportunity to build any services on top of connectivity.

Is 5G a gamechanger?

5G is often cited as being the game changer that will take the telecoms industry into a new era and new directions. Its lower latency, higher bandwidths certainly open up some new opportunities but these need to be combined with other fixed connectivity options as well as the remaining components supporting the end outcome.

In fact, this brings the telecoms industry much closer to the other ICT sectors and opens up enormous potential for building more relevant, focused services for all customer segments and all business partners serving those segments.

What is important is that the technical aspects of 5G combined with other services rendered down to the 'Edge' represents a significant change in architecture. The combination of services of connectivity, storage, compute, analytics, security and the applications being delivered all make for a localised environment that requires significantly different management compared to previous iterations of the networking cycle. Being able to bring health records to a doctor treating a patient remotely along with high quality video of the individual is a compelling scenario. Similar examples can be seen in factory automation as well as personal services drawing on data stored outside of the application but combined with real time connection. This emphasises further the need for an application, device or other entity to be able to conjure up the right connectivity services to underpin the outcome a consumer or business customer is looking to achieve.

However, the need to have a grasp on where workloads are executed, where other resources are coming from, and the customer experience factors, all also shape the service and require interworking with partners, channels and the customer themselves. **So, the range of data, analysis and interfaces with other party's offerings become essential components of the future delivery of connectivity services**. The management of this will also require interfacing with multiple management systems, software applications and other IT environments.

Is connectivity a technology or product?

Perhaps as telcos shift to sell their connectivity into other partners who offer higher level services, then should the connectivity be seen as technology? After all, it is a contributing component to the end product that consumers and businesses are paying for. As the telco becomes more cloud and software-centric, it will increasingly be possible for customers and partners to reach into the telco platform and purchase some of the components making up the telco infrastructure. Applications developers see the use of messaging such as SMS and social media applications building on broadband as just such an opportunity. The obvious emerging example of this is network slicing for specific applications as it is evolving today under 5G. Perhaps this is the first step of selling tech rather than just access connectivity plus higher-level Quality of Service (QoS) mechanisms such as SD-WAN,]. Furthermore, the more both internal and external operations are run on cloud environments, the easier access will be to these components. The point here is that connectivity isn't the final service required by partners, but it's the resultant service is the combination of applications, content and other elements of future consumer and business activities, such as retail or financial services bringing all relevant information into play.

The issue that the telecoms industry has got to deal with is that applications developers, providers of business applications and even cloud providers work on the basis that the connectivity is just there! Being more open to working with partners and emphasising the role of connectivity, making it easier to do business with the telecoms component will help the industry.

The Telco to TechCo transformation

TechCo comes with association to the generation of Internet players with their global scale, lack of legacy IT and willingness to try and if necessary, fail quickly building on the global presence, social media, scale of research, data analytics and the flexibility of cloud.

The aspirations of moving from telco to TechCo or to a Digital Service Provider (DSP) or any other label is dependent not on the inner workings of the organisation but on what the business sells to its customers, partners, and channels. In the past the end goal of telecoms was a full end-to-end service. The shift to broadband, both fixed and mobile, is selling that broadband connectivity upon which the partners, channels and customers build a wide range of activities. Pretty much all of which is out of the control of the telco.

The problem is that we know the start point: the world's telcos have come from the breaking up of monopoly provision of telephony to a competitive market covering fixed and mobile connectivity products. The end game of becoming a TechCo is much more of a challenge. Why is TechCo so appealing and, indeed, what exactly is a TechCo?

What we know is that the Internet generation of giants have grown up off the back of the connectivity industry. They have a different, global business model that exploits search, advertising, cloud, compute and social media applications, amongst others. The model requires exchange of personal data in exchange for social and business beneficial applications. It is not the simple model of the telco selling minutes, broadband or private networks. The key difference is that the TechCos have grown up in an era where their data centres and IT estate is fundamentally global and centralised, whilst benefiting from the scale of the Internet and few, if any, geographic boundaries. The telco start point, on the other hand is a centralised controlled deliverer of telephony and connectivity services where the technology creating the service is the defining element rather than what customers achieve using the service.

A changing business model?

So, perhaps we should think of the Telco to TechCo shift as being one of a changing business model for the telcos, bringing their environments into the cloud era of compute and offering connectivity services into this new diverse digital ecosystem. Under the old model the telcos were in control of the whole service end-to-end. They even built the infrastructure, end devices and managed the whole service in the past. Today's and tomorrow's connectivity services are much more open to the forces of demand and supply from every consumer and business application. In some ways this is a complete change of direction from 'dictating' the service in the past to offering a service which adapts to the business environments in which it plays the essential connectivity role in the future.

Is this a single journey?

The reform that telcos are going through can be split into two different trends:

- The reworking of the telco with the inner systems and processes that go to deliver the connectivity services associated with the telecoms industry

- A repositioning of the sale of the resultant services directly to customers but also as part of higher 'value' services

For the first, this is a massive reorganisation involving removal of old siloed systems and replacing with a cloud-enabled platform that streamlines the process of creating , delivering and managing the connectivity services for which the telco is paid. Automation will play a massive role in the new operational environment, as will as shift from Waterfall to DevOps. Fundamentally it is bringing the telecoms industry up to date in terms of IT environment and putting something Fit For Purpose in place for the next decade and beyond. It can be argued that telecoms has been too inward looking for the past several decades and not taken account of the wider commercial world. With the shift to outside-in economics, the outside influence is shaping the industry and hence gains in significance for the thinking of the telco and the way the business is set up and run.

For the external facing aspects, the defining moment comes when the services telcos are selling are available online, easily accessible to partners and customers alike, and are fundamentally cloud-based and open API available. After all, the end result is often embedded into another offering such as content delivery, factory automation, financial transactions or the like.

The journeys for both are, of course, intertwined. The sooner the reform of the inward view is completed, the easier the external facing component will be. One question is the degree to which the telcos can do this on their own.

Can CSPs do it?

The answer is self-evidently that they cannot. The development of telcos over the last 30 years has seen much of the innovation formerly developed inside the labs of the telcos themselves, go to the supplier community. The Network Equipment Providers (NEPS) have taken on the primary mantle of innovation as far as the network is concerned and in conjunction with other more software specialised companies, developed the OSS and BSS sides of the business. Development and innovation now shifts to a wider ecosystem with the cloud providers, application developers and the business software community providing the innovation. So, part of the telco cultural change to TechCo is building a more software-centric, applications and code development culture inside the business, whilst, at the same time, leveraging the supplier community to back fill development roles.

The explosion of cloud computing has opened up this aspect of development and given new platforms upon which everybody can develop their software and run their applications.
Every organisation is different, even in the telecoms world. So, the degree to which the business has embraced this new software-centric view of the world will also differ. Companies like Vodafone have stated they will bring more and more developers in-house and maintain that expertise. Others, like BT, have done short term deals to leverage the capabilities of cloud and other providers to develop their software environments. Smaller telcos will not have the market clout to attract the skillsets to deliver this transformation so will rely more heavily on the external community. But, larger telcos may well also use the external sources and focus more on the operational environments. Even here the telcos will lean on their supplier partners to manage different aspects of the operational and innovation environment. This is the world of what we call 'managed services'. It is a generic term that covers so many aspects of the technology foundation of the telco world. In fact, it is even more complicated today with the advent of cloud services and the multi-cloud approach to delivering different aspects of the working environment.

This results in a match-making exercise. The telcos decide which aspects of the systems can be delivered in-house and then look to third parties for support in delivering the rest. In some cases this will be a total outsourcing, but, for the most part, it will be a dovetailing of services. Afterall, every supplier is developing its own cloud-based offering and will build capabilities to sell into the telco environment to complement existing in-house functions.

Creating this overlap of cloud environments to deliver both the internal and external modernisation of the telco is the challenge. With a more open platform, the telco can also bring in more focused software elements to address particular issues say in the customer experience realm. Developing an overall management framework and allocating responsibilities to manage it whilst supporting the operational environment is the critical element of this new supplier telco relationship.

Key areas shaping the journey

Fresh DNA and culture

The pandemic necessitated a shift in working practices that often surprised the telco operational teams. The label of 'conservative' and 'laggard' has often been levelled at the telecoms industry. Well, the way in which services were maintained, switched around to cope with new work patterns and subsequent traffic patterns, all showed that telecoms is actually flexible to a certain level today!

Has this broken the dam and will it lead to rapid transformation of the world's telcos? The timing is key as the boom from mobile has generally run its way through the system and growth is limited in most markets. The transition to fibre is being driven at different rates across the world but definitely in the plans of most telcos with its lower operational costs and future-proofing of service improvement. In some ways, the blinkers are off and telcos now see their future more clearly. The lack of adjacent market revenue is focusing the telco's attention on becoming the best possible connectivity provider and then some incremental services might be layered on top. But the dreams of annexing significant market chunks has, in the main, disappeared.

A more pragmatic approach will see the emphasis on building operational excellence. This self-evidently requires a review of the supplier roster, removal of older more expensive technology and finding the right balance of partnerships to deliver the excellence required for the future ever more connected world.

Customer interaction

It is widely acknowledged that the customer experience previously delivered by the world's telcos has been sub par. NPS scores for telcos have never been exemplary. Indeed, the fact that we most often contact our telco when experiencing a problem inevitably leads to low NPS scores however the problem is resolved. Supporting customers through the range of possible channels and the ability to switch seamlessly between channels during an interaction, maintaining knowledge and context of the customer, all require closely coordinated services. A software-centric, cloud-based approach to engaging with customers through their preferred channel, is a major boost to improving the whole experience. And, given the market changes outlined above, is also a key way of building closer relationships with fellow ecosystem partners.

Operational issues

Telecoms comes with a traditional engineering-centric level of manual operations. Compound this with the multiple systems and processes developed over decades and it is evident that a more automated operational environment is critical to bringing the telco into the digital age.

Reducing trouble ticketing, resolving first time around, are always seen as key targets for automation. MTTR has been a key metric for years. But, the sheer volume of tickets and automatic resolution , solving customers problems before even aware of them, has got to be the goal of new AI-driven systems.

Furthermore, introducing third party software and applications into a telco environment, inevitable in the current environment, also needs to fit in with this more efficient operational and automated environment.

Skill sets and resources

The underlying issue for the telco is what expertise it retains in house and what it needs to buy on from third parties. The Hyperscalers are offering ever deeper reach into the operational environment, but so too are the former NEPs and players coming at the operational environment from a BSS and OSS background.

The more open the environment becomes, the more essential it is to work with partners who bring expertise not only from their own perspective, but a from broader frame work to improve overall management and efficiency.

Is this scope creep for the vendor community, or an opportunity to add value by bringing more elements under the control of a trusted third party?

The role of data

One of the accusations levelled at the telcos is that they have never made the best use of the data under their rooves. This is a fair criticism. The conservative nature of telcos has seen them playing well within the rules and rarely pushing the boundaries. At the same time the Internet players have come in the radically different approaches and leveraged their strongholds of search, social media, content and applications. The building of a more automated, simplified environment can only help the telco build on its data knowledge of activities both at an individual person, family or business level as well as aggregated up to a better understanding of the way a city, country or region is working. Given the combination of other resources meeting connectivity at the point of interaction, it will be necessary to work with other parties to make the most of this data but opening up APIs and acknowledging the need to leverage the data is a great start.

In short, every telco will end up with a different blend of services from external sources contributing to its journey to TechCo and beyond. Migration to different cloud services is still at a relatively early stage. The end goal of a fully software and cloud centric telco or TechCo will take many years. It is certainly not a Big Bang approach. Many are addressing the customer facing systems first and leaving legacy back office for a longer term migration. This is perfectly acceptable and plausible given the ability to run things in parallel, use APIs to extract data out of legacy services and extract the greatest value out of current investments.

To go through this transformation, the telco community has got to think about:

- DNA change: Remove the silo mentality of fixed and mobile, consumer and business networks from the company
- Cloudify: Remove legacy systems replacing them with cloud and software optimised environments
- Open APIs: To allow external parties to reach into the world of connectivity and extract the right connectivity for a particular situation
- The ecosystem play: Establish working practices with all ecosystem partners whilst retaining end customer relationships for the underlying individual, business and societal requirements
- Customer experience: Refresh the customer experience approach bringing omnichannel, digital and human contact relevant to each customer group
- New supplier relationships: Establish key relationships with cloud and Hyperscaler players for both next generation internal infrastructure but also for joint go-to-market activities
- Focus on data & AI: Radically enhance the approach to data gathering, analytics and the use of AI for both operational and customer insight perspectives
- Skills & resources: Identify in-house resource and skillsets and complement with external technology and managed services offerings to build short and medium term positions
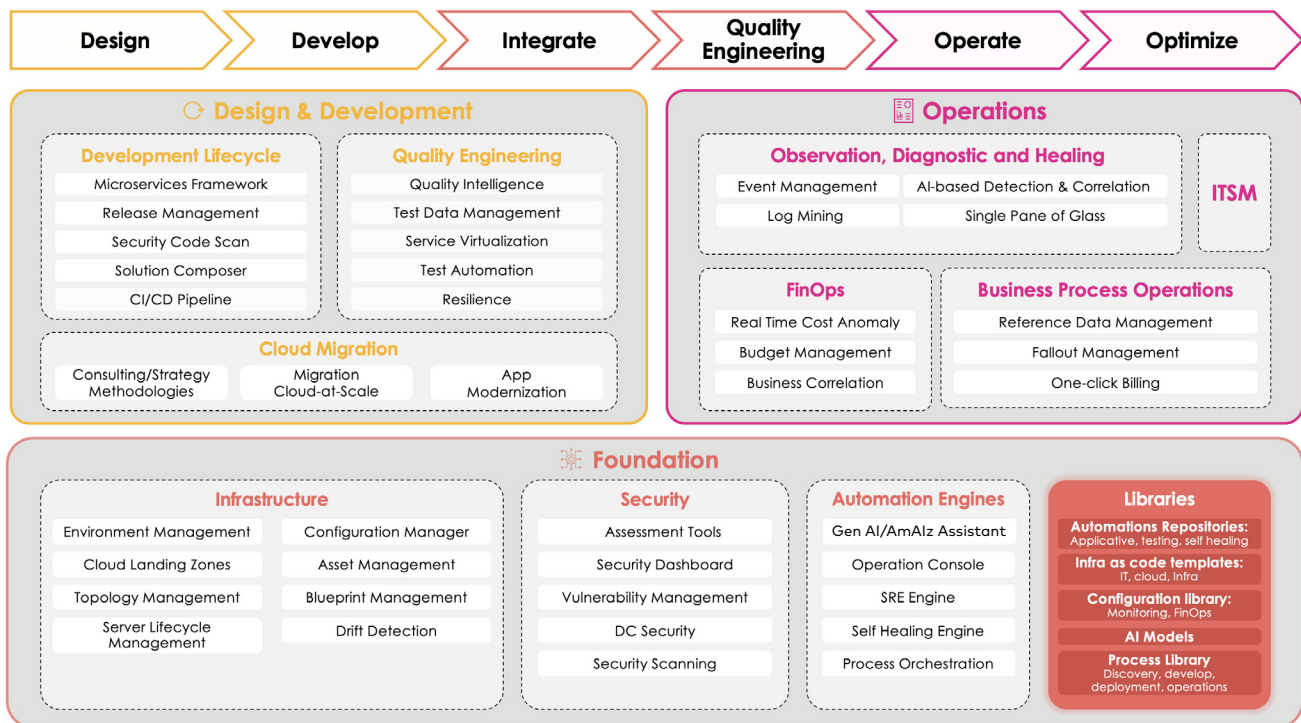
A new generation of Amdocs managed services

Amdocs has recognised these major market changes and has brought together multiple elements to address the transformational needs of the world's telcos.

The Amdocs Cloud Management Platform (ACMP) brings together many of the tools developed during its decades of providing managed services into the world's telcos and serves them up in a clean AI-driven, cloud-based model to fit the shifting telco requirements.

Amdocs Cloud Management Platform (Ә·CMP)
Supporting the full-service operation lifecycle

| Design | Develop | Integrate | Quality Engineering | Operate | Optimize |

○ Design & Development

Development Lifecycle
- Microservices Framework
- Release Management
- Security Code Scan
- Solution Composer
- CI/CD Pipeline

Quality Engineering
- Quality Intelligence
- Test Data Management
- Service Virtualization
- Test Automation
- Resilience

Cloud Migration
- Consulting/Strategy Methodologies
- Migration Cloud-at-Scale
- App Modernization

▣ Operations

Observation, Diagnostic and Healing
- Event Management
- AI-based Detection & Correlation
- Log Mining
- Single Pane of Glass

ITSM

FinOps
- Real Time Cost Anomaly
- Budget Management
- Business Correlation

Business Process Operations
- Reference Data Management
- Fallout Management
- One-click Billing

✺ Foundation

Infrastructure
- Environment Management
- Configuration Manager
- Cloud Landing Zones
- Asset Management
- Topology Management
- Blueprint Management
- Server Lifecycle Management
- Drift Detection

Security
- Assessment Tools
- Security Dashboard
- Vulnerability Management
- DC Security
- Security Scanning

Automation Engines
- Gen AI/AmAIz Assistant
- Operation Console
- SRE Engine
- Self Healing Engine
- Process Orchestration

Libraries
- **Automations Repositories:** Applicative, testing, self healing
- **Infra as code templates:** IT, cloud, Infra
- **Configuration library:** Monitoring, FinOps
- **AI Models**
- **Process Library** Discovery, develop, deployment, operations

With the right technology foundation in the background, Amdocs Operations professionals can:

- Acknowledge differing architectural implementations throughout the business and identify the appropriate workload allocation

- Bring DevOps islands of activity together to deliver a cleaner orchestrated operational environment

- Blend on-premises and multi-cloud environments acknowledging the diverse nature of the telco's operational environments

- Bring security to bare on all of the elements essential to manage the telco environment

- Tap into the thousands of pieces of telco code developed over the multiple telco engagements around the world

- Co-create automated processes with CSP IT teams

- Gain visibility of operations over on-premise as well as cloud platforms

- Facilitate monitoring of financial aspects of working in the hybrid environment

Conclusions

Despite the increased importance of connectivity in every aspect of our daily lives, the telco world is waking up to the reality that much of what it delivers will be shaped by factors and players outside of their control. The new 'outside-in' dynamic means that the telco must be able to adjust to these ever-shifting demands from partners and customers alike.

This makes building the right operational environment, with lower cost of operations but higher quality of delivery critical.

Stripping out legacy systems, services and practices and replacing them with Fit For Purpose cloud based operations will see telcos change their DNA significantly. This will have a knock-on impact on the technology, skillsets and partnerships required to drive the business.

The goal for the telecoms industry is to build this more efficient broadband delivering engine. The task then is to open up its power to customers, but more importantly, to ecosystem partners in order to expose new revenue opportunities as well as securing existing ones. This includes the ability for partners to reach into the network environment and extract technology components to build into their broader offerings.

The shift to a more software centric telco and the openisation of supply chains now means that introducing new elements from different suppliers is becoming increasingly likely. Creating this more open, dynamic environment is partly an attempt to move away from 'lock-ins' with specific vendors but, more importantly, bringing innovative solutions to solve specific problems. Delivering this emerging environment will require much more powerful management tools and different relationships with managed services suppliers with specialist knowledge. The degree to which an individual telco brings in this expertise will depend on a number of key factors including internal skillsets, size and scope of the telco.

What does the connectivity provider look like over the next ten or twenty years? The answer is a blend of fixed and mobile broadband with an efficient operational engine behind the customer-facing services that keeps people, businesses, things and society connected seamlessly.

What is clear, is that the shift from telco to TechCo is not really the issue. The modernisation of the individual telco into one that can keep pace with the demands being placed on it from customers and ecosystem partners alike, is the real question. The temptation to drift outside of the core connectivity market has not resulted in the bonanza anticipated by many a telco executive. Ambitions should be reset to build the optimum connectivity engine and then to open up its power through APIs and channels to other parties.

make it amazing

Amdocs helps those who build the future to make it amazing. With our market-leading portfolio of software products and services, we unlock our customers' innovative potential, empowering them to provide next-generation communication and media experiences for both the individual end user and enterprise customers. Our 31,000 employees around the globe are here to accelerate service providers' migration to the cloud, enable them to differentiate in the 5G era, and digitalize and automate their operations.

Listed on the NASDAQ Global Select Market, Amdocs had revenue of $4.58 billion in fiscal 2022.

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