



Enterprise Communications: The cornerstone of enterprise digital transformation

White Paper

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April 2019

Alcatel•Lucent
Enterprise



Cloud, social networks, mobile internet, big data, and more importantly, customers are urging enterprises, of every size, to embrace the digital transformation.

The combination of social networks, mobile internet, data lakes and information warehouses – all accessible as a Service from the cloud – is changing the way people collaborate. It is also changing how enterprises want to engage with customers, and more importantly how customers agree to engage with companies. We refer to it as Digital Engagement.

Digital engagement is not restricted within the walls of a contact center, but has become ubiquitous and is ongoing. It is also no longer just a moment, but rather a series of moments that, when combined, are shaping the Digital Experience (DX) that every successful company should be seeking. Experience that customers, patients, citizens, employees are expecting to get in return for the time and money they spend with you.

It's no surprise that communications are instrumental in a successful digital transformation, as it is the solution that connects people-to-people, but more importantly, connects people, processes and objects in all possible combinations.

This document explores four opportunities that organizations should seriously consider on their transformation path towards the digital age:

Connectivity: Hybrid communications lets you harness the power of the cloud while leveraging existing investments made at ground level (on premises)

Internet of Things/Intelligent objects: Expand communications beyond people-to-people interactions, and make the billions of connected objects intelligent enough to foster speed and agility

Advanced Intelligence: Take advantage of the latest innovation in the artificial intelligence (AI) space so that every communication is in context with the relevant, existing or predictive, information, to deliver augmented intelligence

Cloud economics: Offer a choice of deployment architectures, ranging from private to public cloud, as well as breakthrough innovative models for both our partners and customers.

Connectivity

Enjoy the best of both worlds with hybrid communications, by connecting the ground to the cloud. Many organizations are not ready to move fully to the cloud. Hybrid communications offer an alternative that can help them take advantage of the power of the cloud, and the flexibility of associated models while, leveraging their past investments, and best of all, at no risk.

Hybrid communications combine the power of enterprise grade communications applications and infrastructure, with the flexibility of the cloud.

The best approach is to provide connectivity choices to enterprises and government institutions. The choice to decide when and how they want to embrace the benefit of hybrid communications. It all starts with building a strong foundation on the ground.

On the ground (On premises)

We are investing in our flagship platforms, and strengthening the capabilities offered by the Alcatel-Lucent OmniPCX® Enterprise, Alcatel-Lucent OpenTouch® and Alcatel-Lucent OXO Connect, for mid-large and SMB customers respectively. Significant efforts have been made to security (encryption), serviceability (Cloud Connect and Fleet Dashboard) and connection to the cloud (Rainbow Agent) to prepare for hybrid communications deployment.

In the cloud

Released in 2017, Alcatel-Lucent Rainbow™ has now become a complete, cloud-based platform providing multiple cloud services to more than a million users every day.

Often defined as “the relationship machine”, Rainbow enables connection between people, processes and objects. The comprehensive set of APIs and SDKs, are attracting developers from around the world to create a very powerful community.

Rainbow can be used for Communication Platform as a Service (CPaaS) to enable communications to be at the center of cloud-based communications enabled business (CEBP) processes.

Although Rainbow is a multi-purpose platform, its most known for its Unified Communications as a Service (UCaaS) which can complement premises-based

corporate telephony platforms, with a variety of features such as, group chat, IP voice and video calls, document sharing and voice conferencing (including traffic).

Creating a hybrid communications architecture with OXE or OXO Connect plus Rainbow UCaaS opens new opportunities, including::

- Enabling digital transformation for customers who can't afford to install on-premises UC – especially small and mid-sized enterprises
- Using the full Rainbow UCaaS solution under a freemium subscription model, thus preventing organizations from burning CAPEX
- Offering comprehensive and affordable conferencing services that are cost-effective based on an existing agreement with major carriers/service providers across the globe.

In addition, the Rainbow WebRTC

gateway enables communications from, and to, any device. This takes full advantage of the hybrid communications architecture, and of the unique corporate telephony capabilities from the communications servers.

White Paper

Enterprise Communications: The cornerstone of enterprise digital transformation



Internet of Things/Intelligent Objects

Today, there are more than 23 billion connected devices and that number is estimated to grow to 75 billion by 2025: Far more than the earth's population. Some basic math, makes it clear that a majority of communications in the future will no longer be just between people, but rather, will be initiated and/or terminated by objects.

However, one thing most of the objects don't have is intelligence. Being connected doesn't mean they are intelligent enough to make a decision based on the information that has been collected.

To be effective, connected objects need to be complemented with a platform that ensures the right information will be relayed to the right person, at the right moment. A platform such as Communications Platform as a Service (CPaaS), can act as an orchestrator to enable a myriad of new and innovative digital services in every sector. Following are some smart city examples.

Intelligent objects in smart cities

Intelligent objects play a pivotal role in the construction of smart cities, within several application domains; smart lighting, public security, smart parking, environment management, traffic management, among others.

By 2022, one billion connected devices will fuel smart cities around the globe, changing citizens' lives and creating a safer environment for everyone.

White Paper

Enterprise Communications: The cornerstone of enterprise digital transformation

Making the place safer

CCTVs have become prevalent in most of the cities during the last decade. However, human supervision is still required to make decisions as cameras do not provide anything more than video frames.

Pattern matching tools are used to locate objects of interest within an image. During the learning stage, the system is first presented with a known, good template image from which information is extracted. Then, during the matching phase, information from an unknown image is extracted. This data is compared with that extracted from the template image. However, it's not the camera that is intelligent, it's the pattern matching software. But while the software can identify the matches, it is not intelligent enough to make a decision.

Information must be sent to the engine part of the CPaaS platform which makes a decision, such as notifying security staff on any relevant device.

Traffic management

Traffic signal preemption allows the normal operations of traffic lights to be managed. The most common use of these systems is to manipulate traffic signals in the path of an emergency vehicle to halt conflicting traffic. Some systems use acoustic sensors, line-of-sight, radio signal, and more recently, GPS-based traffic preemption systems. These sensors or systems, send basic information to a command control system (the CPaaS platform) which will make a decision and remotely change the traffic light status, while potentially establishing communications with emergency and hospital staff in the event that preemption is required by an ambulance or a fire department vehicle.

Communications between objects, people and processes are rapidly expanding across the organization, from customer service, to supply chain and logistics. At the center, CPaaS provides intelligence and context, enabling the delivery of the right information, to the right person, on the right device, at the right time.





Advanced Intelligence

Advanced intelligence is one of the next important steps as we move forward in the digital revolution. Combining artificial intelligence (AI) capabilities with communications will completely transform the enterprise landscape. It will unleash unexplored areas in which humans and robots can work and interact together making cognitive communications a reality. It will deliver a smarter, more personalized approach to productivity and collaboration to create a new augmented intelligence, human-centric experience.

Cognitive communications

Cognitive communications are taking organizations into the human-centric era where collaboration and communication systems adapt to different behaviors, expectations and preferences. In this new workplace, employees can use voice commands to interact with natural language bots to get help with daily issues. Guided by AI, smart bots can also anticipate user needs, based on context. These smart bots can streamline workflows by providing immediate answers to questions and problems.

Changing the conversation

Smart bots can be accessed on many different interfaces, including both fixed and mobile phones, and as well PCs and tablets.

They can also transmit information over a variety of media, including text, instant messaging, voice, as well as bot-to-bot communication.

A bot? What's that?

What exactly are bots? They are simply put, software applications that run automated tasks in a given context.

The tasks that the bots have been trained for are structurally repetitive, enabling the bots to perform them faster and more accurately than humans.

Bots can provide information on virtually any topic by searching, finding and returning the information that the user has requested. They can also leverage AI to learn from user behavior and preferences.

Over time, bots can become better at using data to anticipate user needs and expectations; for example, sending a notification to your smartphone suggesting a sandwich bar near your

morning meeting location; or suggesting a phrase to auto-complete your email message.

In the current enterprise landscape, most bots are designed for a single purpose (one action per bot). As users grow more accustomed to bots, and have greater confidence in their ability, bots will likely have multi-functional responsibilities.

Advanced intelligence offers many more applications in every domain. Face and voice recognition, learning machines, pattern recognition and decision trees offer unlimited areas of exploration to help organizations gain communications context and embrace the digital revolution.

Cloud economics

New models are about both architecture and “as a service” options. Digital transformation is enabling new business models and new ways to improve return on investment.

Developing innovative solutions without making the same efforts for the models would be pointless. Today, business models are as important as the capabilities, applications, and underlying services.

There are three distinct types of new models in our strategy:

1. Deployment models
2. Payment models
3. Outcome-based models

Deployment models

From the premises to the cloud, customers can choose the option that's best for their business.

ALE communications can be installed on-premises, it can be hosted by a third-party with OTEC solutions, it can be fully cloud-based with Rainbow, or it can be a hybrid model with a combination of Rainbow plus a communication server, either on-premises or hosted.

Payment models

We are moving from the world of CAPEX business models, to now, where more organizations are looking to consumption-based or subscription-based models.

With OTEC and OTEC Flex customers can choose a pay-per-user-per-month model. And now Rainbow offers additional flexibility.

Outcome-based models

Outcome-based models are among the most powerful and innovative models.

The principle behind outcome-based models is simple: Agree on an economical model that is dependent on the outcomes (benefits) that the customer or the organization will get from the service or the application we provide. Fundamentally this is a risk-sharing model.

For example in the hospitality industry, where an occupancy-based model is in place at a hotel, the guest pays for the communications solutions. If there is no guest, there is no charge.

As we look to the future, we are investigating whether this model could be expanded to CPaaS-enabled projects. In that case, for example, the price of an API call could vary depending on the value it brings to a customer's business, among other criteria.

White Paper

Enterprise Communications: The cornerstone of enterprise digital transformation



Tailored solutions for verticals

Industries such as hospitality, healthcare, education, transportation and government have specific needs that can't be fulfilled by generic communications solutions. They require a global approach to meet their business expectations.

The ALE strategy for vertical industries is to focus on markets where real-time communications play a significant role in core business processes. When integrated in applications, they provide end-to-end solutions resulting in tangible outcomes for both organizations and their customers.

The strategy builds on a combination of elements necessary to provide an end-to-end solution, such as:

- Solutions from the ALE Communications portfolio (Communications servers, Unified Communications software, notification and broadcasting servers)
- Solutions from third-party application providers and partners
- Integration services
- Deployment and business models

Even though each sector has its own specific requirements, our research shows that there are three areas where value-added solutions can be proposed:

- Proactive maintenance and people safety
- Digital engagement
- Efficient operations

Proactive maintenance and people safety

In this area, we are leveraging options offered by notification, alerting and broadcasting solutions. They enable event-driven communications directed at preventing casualties and damages.

In education, this translates into solutions for safe campuses in education,, applications for unattended luggage in transportation, asset tracking in healthcare, and flood and fire prevention in government.

Digital engagement

The Rainbow Hub and its CPaaS capabilities are instrumental in digital engagement, by integrating real-time communications and business applications, with a special mention for customers' mobile and web applications. Enterprises are able to offer innovative solutions for customer service, to attract and retain their customers.

Integrating chatbots, artificial intelligence and leveraging capabilities offered by IoT or location-based services become as simple as 1+1. This enables enterprises to offer the digital experience that customers seek while deploying a genuine digital engagement strategy, far beyond the traditional boundaries and options of traditional customer service endeavours.

Efficient Operations

There are no efficient operations without efficient collaboration, and there is no stronger collaboration than when it is integrated within business operation applications.

Employees can quickly click-to-IM, click-to-call, and click-to-video to get information from peers or suppliers, or from the field operation team. The process is accelerated to deliver the best services to customers. By adding an event-based simple workflow, the right people can be notified by the most efficient means, such as an application notification, a voice call, or a text message on their cell phone.

Communications integration within the CRM application will simplify the process to deliver the best services to the enterprises' customers.



Takeaways

From an enterprise communications perspective, one of the most significant misconceptions about digital transformation would be to ignore it and hope that everything will work out fine, even if nothing is done.

The problem with the idea that 'digital transformation can be ignored' is that, it is already underway, with or without an organization getting onboard. It is being driven by customers who have changed the way they live with technology, and who are expecting corporations and government bodies to have anticipated their digital shift.

At ALE, we understand that being willing to change, to address the requirements of the digital age can be an onerous undertaking. We appreciate the impact that this can have, from the corner store pharmacy to the large multi-national organization. Together, we can chart the path forward.

It will require a clear enterprise communication strategy, including the cloud, as well as mobile and big data to enable new business opportunities to deliver the digital experience that customer are seeking.

A hybrid communications strategy featuring Unified Communications and CPaaS, coupled with communication servers (on premises, or in the cloud), can pave the way toward a digital experience with real-time communications at its cornerstone.

White Paper

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