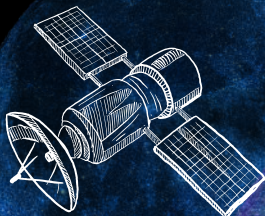


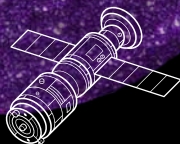
GENESIS



**INDUSTRY IMPACT:
THE SATELLADY: MEETING
CANDACE JOHNSON**

**OPINION 360:
BRUNO TOMÁS ON NETWORK CONVERGENCE
MARCO HOFMANN ON THE FUTURE OF 5G**

**ALWAYS A STUDENT
TEN YEARS OF ROCCO EDUCATION**



**WORLDS THAT
CONVERGE: WIFI 7,
5G, SATELLITE**



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THE ISSUE...

When having an issue of Genesis magazine which includes space as a topic, its just so easy to cite references... "Space, the final frontier." "To infinity and beyond!"



Prepare for lift-off, space enthusiasts! It's time to suit up in your pressure garments and don your helmets, because in this issue of Genesis magazine, we're blasting off into the far reaches and uncharted frontiers of **convergence** like never before. Get ready to experience the game-changing overlap and connectivity of Wifi7, Satellite, and 5G, all converging in ways that were once unimaginable in the world of telecoms.

We've been lucky enough to sit down with none other than the Satellady herself, Candace Johnson, and her experiences and insights on the topic are truly out of this world. Her interview is a must-read, guaranteed to leave you weightless with inspiration.

But that's not all. We've also got the expert perspectives of Bruno on WiFi 7 and Private Networks, and Marco on 5G. As well as some important insights from Dhiraj on resourcing the industry. With all of these incredible minds, you won't want to miss a single page of this issue. So strap in and brace yourselves for re-entry, a thrilling ride into convergence. This is a celestial edition of Genesis magazine that you won't want to miss!

JASON BRYAN /
JASON@ROCCO.GROUP

Editor-in-Chief

www.roccogenesis.com







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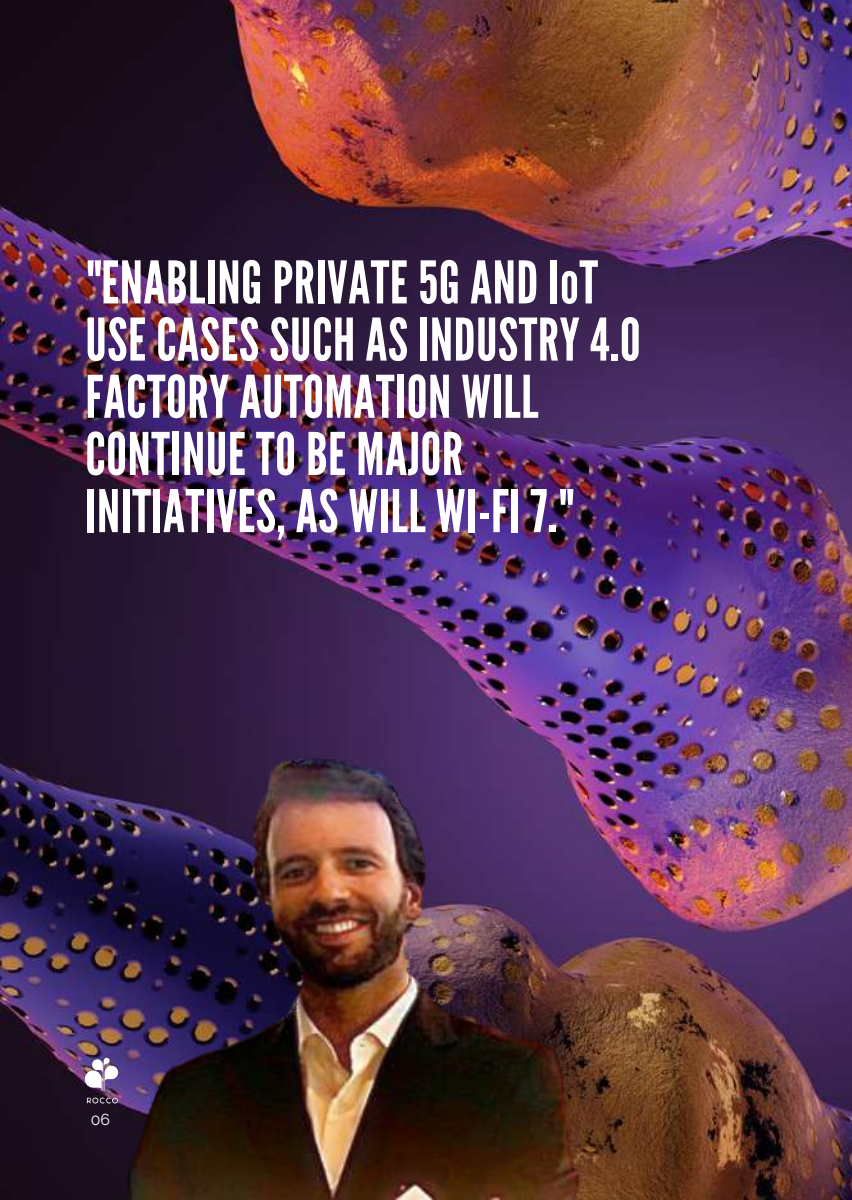
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ROCCO

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A man with a beard and short dark hair, wearing a dark suit jacket over a light-colored shirt, is smiling and looking towards the camera. He is positioned in the lower half of the frame. The background is a vibrant, abstract composition of wavy, perforated shapes in shades of purple, blue, and orange, set against a dark purple background. The perforations are small, circular holes that create a textured, mesh-like appearance. The overall aesthetic is modern and technological.

**"ENABLING PRIVATE 5G AND IoT
USE CASES SUCH AS INDUSTRY 4.0
FACTORY AUTOMATION WILL
CONTINUE TO BE MAJOR
INITIATIVES, AS WILL WI-FI 7."**

JASON BRYAN
INTERVIEWS:

BRUNO TOMÁS

CTO AT THE
WIRELESS
BROADBAND
ALLIANCE (WBA)



**“THIS YEAR IS THE
WBA’S 20TH
ANNIVERSARY.
OBVIOUSLY, A LOT
HAS CHANGED FOR
BOTH THE
ORGANIZATION
AND WI-FI ITSELF.”**

CONVERGENCE

Jason Bryan

Thanks for taking the time Bruno to answer some questions with us! First some introductions. What is your role in the WBA?

Bruno Tomás

Hi Jason, thank you for this opportunity. I am the CTO for the Wireless Broadband Alliance (WBA). I am responsible for managing technology strategy and working groups focused on the business development and implementation of wireless technologies (Next Gen Wi-Fi, IoT, 5G) and services (OpenRoaming, Cloud, Security, Data, Interoperability).

Jason ROCCO

Sounds exciting, how long has the WBA been around?

Bruno Tomás

This year is the WBA's 20th anniversary. Obviously, a lot has changed for both the organization and Wi-Fi itself. For example, back in 2003, we started by focusing on enabling roaming between wireless LANs, with a strong focus on laptops. Over the years, we've expanded and augmented this focus on convenient access to include enterprise-grade security and privacy, carrier-grade reliability, and seamless and secure interworking with cellular generations, such as 3G, 4G, and now 5G.




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**“WE HAVE NEARLY 200 MEMBERS, BUT
ONE THING THAT HASN’T CHANGED
OVER THE DECADES IS PARTICIPATION
FROM ACROSS THE WHOLE ECOSYSTEM”**



“THAT BROAD, DEEP MEMBERSHIP BASE HAS BEEN CRITICAL FOR ENSURING THAT WI-FI MEETS THE NEEDS OF THE ENTIRE WIRELESS ECOSYSTEM AND THUS THE BUSINESSES AND CONSUMERS THAT THEY SERVE.”



ROCCO

Today, we have nearly 200 members, but one thing that hasn't changed over the decades is participation from across the whole ecosystem: mobile operators, cable providers, infrastructure vendors, device manufacturers, silicon providers, hub clearinghouses, and more. That broad, deep membership base has been critical for ensuring that Wi-Fi meets the needs of the entire wireless ecosystem and thus the businesses and consumers that they serve.

Jason ROCCO

That's great! Congratulations on the 20th anniversary. What's your long-term vision for Wi-Fi?

Bruno Tomás

Wi-Fi is the dominant indoor connectivity technology. More than half of the world's IP traffic traverses Wi-Fi networks. There are 888 billion Wi-Fi devices in use, with an annual economic impact of about USD\$3.5 billion.

But we're not content to rest on those laurels. So, one key initiative is expanding Wi-Fi's relevance to verticals such as manufacturing and smart cities — and even smart countries. The latest example is the Azores, whose nine-island autonomous region is the world's largest outdoor WBA OpenRoaming™ Wi-Fi deployment.

That growth requires more spectrum, which is why we advocated opening the 6 GHz band for license-exempt use. Today, over 35 countries worldwide have designated some or all 1200 MHz of the 6 GHz band for unlicensed use. That's going to be a huge catalyst for exciting new use cases,

including those enabled by Wi-Fi 7 and its 30 Gbps speeds. The additional spectrum also will help improve the cost per bit of delivering services over Wi-Fi, which is especially helpful for serving notoriously cost-sensitive markets such as IoT.

Jason ROCCO

Interesting. In your view, how can private 5G and Wi-Fi be integrated to create a seamless user experience?

Bruno Tomás

Wi-Fi and existing network functions are critical to private enterprise 5G deployments. There is already a mature deployed infrastructure in enterprise around identity management, authentication, policy and management and that insertion of Private 5G into this environment comes with a key requirement of reusing this information. It should not require a parallel infrastructure.

Jason ROCCO

And bearing in mind the previous question what will that mean for Public Networks?

Bruno Tomás

One example is WBA OpenRoaming, which is now supported by over 3 million Wi-Fi hotspots worldwide. OpenRoaming's federated identity schema can be used for private 5G, too.

For instance, instead of using the roaming consortium codes on Wi-Fi, we believe that the PLMN IDs used in the mobile world for some signaling and operator identification could create the concept of a neutral host.

**"WI-FI IS THE DOMINANT
INDOOR CONNECTIVITY
TECHNOLOGY. MORE THAN HALF
OF THE WORLD'S IP TRAFFIC
TRAVERSES WI-FI NETWORKS."**



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An aerial photograph of a coastal city, likely Lisbon, Portugal, during a vibrant sunset. The sky is a mix of orange, pink, and purple. The city is densely packed with buildings featuring red-tiled roofs. A prominent white dome is visible on the left side of the frame. The sea is visible in the distance under the colorful sky.

**“ONE KEY INITIATIVE IS
EXPANDING WI-FI’S RELEVANCE
TO VERTICALS SUCH AS
MANUFACTURING AND SMART
CITIES – AND EVEN SMART
COUNTRIES.”**



ROCCO

This would then allow them to do a dynamic discovery of other partners or other federation members, and eventually we would secure these tunnels using public infrastructure. That could be the one already being used for OpenRoaming on the Wi-Fi side, and then the device would authenticate based on its existing credentials.

Jason ROCCO

As private 5G and Wi-Fi converge, new use cases and applications will become possible. For example, there may be new opportunities for industrial automation, smart cities, and augmented reality. How can we ensure security and privacy in converged networks?

Bruno Tomás

The OpenRoaming model takes these isolated private 5G networks and enables their users to seamlessly and securely connect to OpenRoaming hotspots. That's a very attractive option for manufacturers, logistics providers, and other enterprises that don't want to go through the hassle of establishing roaming agreements with other private 5G network operators in a city, country, or continent. They can just leverage the ubiquity of Wi-Fi and the simplicity and security of OpenRoaming.

Wi-Fi 6E is another example of how Wi-Fi aligns well with private 5G use cases. Wi-Fi 6E provides a host of advanced, enterprise-grade capabilities, such as deterministic quality of service (QoS) and multi-gigabit throughput.

These dovetail perfectly with several 5G service profiles designed specifically for enterprise applications, including factory automation, smart metering, mining, venue hosting, fault management, and surveillance.

Jason ROCCO

What will that mean for public 5G networks?

Bruno Tomás

It's a huge benefit. For example, mobile operators won't have to spend the time and money to extend their public connectivity to those private 5G islands via roaming agreements. Like enterprises, they can just leverage OpenRoaming and Wi-Fi.

It's important to note that this is something enterprises and mobile operators can implement today. 3GPP standards work is underway to enable additional convergence between Wi-Fi and 5G, but OpenRoaming is an immediate solution for enabling convergence.

Another benefit is that this functionality can be processed on the network edge. There are open interfaces between both technologies, so this means that eventually if someone is buying equipment today, they will not have to invest in new hardware. This will be mostly software based.

Jason ROCCO

That is amazing, something that for sure will have a huge impact in the industry. What is on the roadmap of the WBA for 2023?



Bruno Tomás

Enabling private 5G and IoT use cases such as Industry 4.0 factory automation will continue to be major initiatives, as will Wi-Fi 7. In fact, our 2023 Industry Report found that 33% of service providers, technology vendors and enterprises plan to deploy Wi-Fi 7 by the end of this year.

We'll also be working to help members take advantage of a major breakthrough called automated frequency coordination (AFC), which allows standard power operations in the new 6 GHz band. The Open AFC initiative aims to develop an open-source reference implementation of an AFC system. This framework will enable Wi-Fi and other unlicensed devices in the 6 GHz band to operate outdoors and increase their indoor range — all while ensuring that existing services are protected from interference.

And we are already working on our 2024 roadmap. Members have proposed a variety of potential topics, such as Wi-Fi 7 evolution and next generation use cases including convergence with non-terrestrial networks.

A great place to keep up with all of our 2023 and 2024 initiatives is <https://wballiance.com/what-we-do>. That site has information about each of our working groups, research projects, and more.

Jason ROCCO

How can companies interested in being part of the WBA join up?

Bruno Tomás

They can learn about the membership types and benefits at <https://wballiance.com/online-application>. To get more information, they can also email membership@wballiance.com.

Jason ROCCO

Thank you very much for taking the time to do this interview Bruno, see you soon.

Bruno Tomás

Thank you Jason, see you soon at Genesis 2023.



Contact Bruno on LinkedIn if you are interested in talking about network convergence.

LinkedIn:
<https://www.linkedin.com/in/brunocondetomas/>



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DHIRAJ WAZIR

CEO ROCCO STRATEGY

**TALKING ABOUT
THE FUTURE OF 5G**



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MARCO HOFMANN

ROAMING MANAGER
AT SWISSCOM



TALKING ABOUT THE FUTURE OF 5G

Dhiraj Wazir, CEO of ROCCO Strategy, recently spoke with Marco Hofmann, Roaming Manager at Swisscom

Dhiraj Wazir

Marco, many thanks for taking the time to answer some questions on 5G roaming. Firstly, what is your role in Swisscom?

Marco Hofmann

Thank you for the opportunity to raise my voice.

Since 2020, I am Roaming Manager at Swisscom, the company I have been working for over 18 years.

Dhiraj Wazir

It must have been an exciting journey. May I ask you the first questions? What is your perspective on the current state of 5G Roaming, and how do you see it evolving in the future?

Marco Hofmann

Yes, sure. Although 5G is already around a while, I have the feeling we are just at the beginning, especially with the major transformation to a 5G core in mind. This evolution will for sure bring further opportunities and challenges for operators to solve together.

Dhiraj Wazir

What are the main benefits and challenges of implementing 5G Roaming for telecom operators right now?

**“ALTHOUGH 5G IS
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WHILE, I HAVE THE
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JUST AT THE
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ESPECIALLY WITH
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MIND.”**



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Marco Hofmann

Monetization is of course one main challenge. Especially for business customers, I could think of quality and M2M use cases. For private customers, it still needs to be elaborated. For me, 5G is also linked to the phase-out of the legacy networks (2G/3G). Therefore it's a big opportunity to design and build new networks for the needs of a digital society. Moving forward to a new generation of networks, fully virtualised and automated, ready for future innovations.

Dhiraj Wazir

Thanks, Marco, that's a great answer. How do you foresee 5G Roaming impacting industries such as IoT, autonomous vehicles, or smart cities, and what opportunities or challenges may arise?

Marco Hofmann

Well, I do not have a bold prediction. I am convinced the requirements for bigger innovation are based on several pillars. 5G SA networks are in my point of view one pillar. In combination with business and social transformation, the new use cases will evolve step-by-step.

Dhiraj Wazir

What are the potential security and privacy concerns associated with 5G Roaming, and how can they be addressed?

Marco Hofmann

In general security and privacy are key features for every technology. It's about trust. Do I entrust my data to this service or company? Without trust, there is no business.

Dhiraj Wazir

How important are partnerships and collaborations between telecom operators in enabling 5G Roaming, and what factors should be considered when forming such partnerships?

Marco Hofmann

Partnerships are key to exchanging know-how, challenging each other and doing friendly tests. The main factors are: Trust, shared goal/interest and openness.

Dhiraj Wazir

And, how do you anticipate 5G Roaming to impact user experiences, such as data usage, network performance, and pricing for customers?

Marco Hofmann

User expectations are growing continuously; without connectivity and bandwidth all my apps, which are tightly linked into my daily life, become useless. I think flexibility is key in all of those aspects. Providing the desired performance and price, at the right time in the right place. Our networks and offerings need to be built to provide such flexibility for different use cases.

Dhiraj Wazir

What are the future trends or advancements in 5G Roaming that you are keeping an eye on, and what potential implications do they have for the industry?

Marco Hofmann

Private networks, slices and eSIM, although it's not mainly linked to 5G.



**“IN GENERAL SECURITY AND
PRIVACY ARE KEY FEATURES FOR
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ROCCO

“USER EXPECTATIONS ARE GROWING CONTINUOUSLY; WITHOUT CONNECTIVITY AND BANDWIDTH ALL MY APPS, WHICH ARE TIGHTLY LINKED INTO MY DAILY LIFE, BECOME USELESS. I THINK FLEXIBILITY IS KEY IN ALL OF THOSE ASPECTS.”



They have the potential to change our ecosystem. We need to understand those changes and explore their possibilities with a proactive attitude.

Dhiraj Wazir

Why do you feel that adoption rates of BCE are currently so low? and when do you expect BCE adoption rates to pick up?

Marco Hofmann

It is a major change of a standard which is tightly linked in the ecosystem of every MNO. This change has to compete to get prioritized with lots of other projects going on. Being the first adopters means taking risks, dealing with uncertainties, changing plans etc.

Dhiraj Wazir

What advice would you give MNOs who haven't made up their mind if they should be launch 5G roaming or not?

Marco Hofmann

As with 4G and VoLTE, the question is not if, but when. I think strategy and timing are key.

Dhiraj Wazir

What is Swisscoms view on 5G NSA launches? Many operators are launching 5G NSA roaming without testing, do you think this is the right way to go?

Marco Hofmann

As premium brand we want to make sure the service for the customers will work as expected. Therefore, we invest into manual tests and consequently in the best user experience for our partners and roamers.

Dhiraj Wazir

In your role as the 5GRL chair at IO, what advice would you give operators on collaboration?

Marco Hofmann

Participating in the IO labs provides me more perspectives and a broader view on the industry. Please share your knowledge and address your challenges. Besides the meetings, IO mobilize provides a great platform to collaborate asynchronous. I can hardly think of a collaboration where I did not learn anything new.

Dhiraj Wazir

Awesome! Do you think quality will play an important role in 5G Roaming if so why?

Marco Hofmann

Personally I would welcome broader discussion on quality and how we can monitor/measure the experience.

Dhiraj Wazir

Thank you very much for participating in this interview and sharing your views, Marco. It has been interesting to know more about this topic from you.

Marco Hofmann

It has been a pleasure, Dhiraj. Thank you.

Connect and follow Marco Hofmann on LinkedIn if you are interested in 5G Roaming.

LinkedIn:
<https://www.linkedin.com/in/marco-hofmann-763036135/>



BOCCO

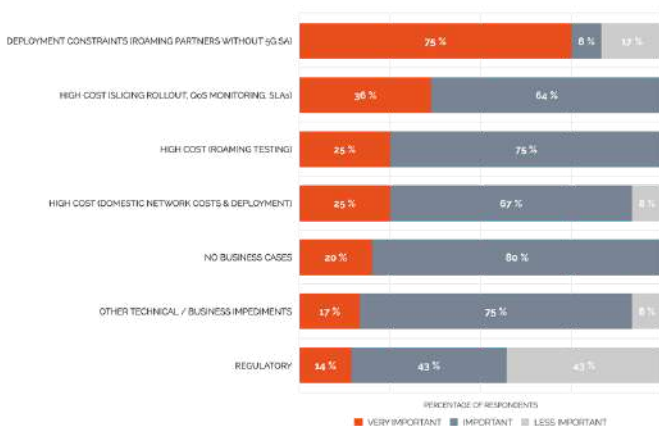


ROCCO RESEARCH INSIGHT

5G SA ROAMING CHALLENGES

"As in 2021, the lack of Roaming partners with 5G SA Roaming remains the top challenge for MNOs"

What would be the main challenges for 5G SA Roaming?



In terms of 5G SA Roaming challenges, Deployment Constraints, specifically, not finding partners with 5G SA is perceived as the biggest challenge (75% view it as Very Important). Although to a lesser extent, MNOs have indicated that the cost related to slicing roll-out, Monitoring QoS and SLAs is also an important challenge. The following comment stresses the idea that launching custom slices for specific verticals is a key challenge.

"Custom slices for specific verticals"



**WHY ARE
THERE JOB
LOSSES IN
OUR
INDUSTRY?**

**A VICIOUS
CIRCLE THAT
WE SHOULD
BROKE**



ROCCO



**BY DHIRAJ WAZIR,
CEO ROCCO STRATEGY,
PROGRAMME DIRECTOR IO**



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WHY ARE THERE JOB LOSSES IN OUR INDUSTRY?

Nomophobia is a thing!! It comes from "NO MOBILE PHOne PhoBIA" (National Institute of Health). We live in an age where mobile phones are giving cocaine a run for its money when it comes to addiction. Whilst most sensible people would think about the societal impact of this, I, on the other hand, am confused ... very, very confused!!

How is it that with mobile phones omnipresent in our lives, and with most countries having just 2-4 operators, and the entire population dependent on them for service ... we have job losses in our industry! As an industry, we should be setting records that would put Usain Bolt to shame!

But we are not, and every other day someone loses their job due to "reorganisation necessary to keep the company healthy."

Let's not tiptoe around the topic, in very most instances job cuts happen due to the failure of the company to deliver to shareholders' expectations as investments don't deliver the expected RoI.



I'm no expert on global business in general, but there is a recurring and very specific trend I've seen develop over the last few years in telecom, and this I'm afraid is a big contributor to our job losses.

Over the last 20 years, mobile operators seemed to have gone through an identity crisis. They wanted to be THE connectivity providers but not become a "dumb pipe". To be fair, the first Value Added Service the telcos launched was such a huge success, that it was difficult for Operators to believe that they didn't have the Midas touch. That's correct I'm talking about SMS, boy did it take off and beat any forecasts that existed (I'm pretty sure at launch no one had even bothered to think of doing a forecast, let alone being able to do an accurate one).

**OVER THE LAST 20 YEARS,
MOBILE OPERATORS SEEMED TO
HAVE GONE THROUGH AN
IDENTITY CRISIS.
THEY WANTED TO BE THE
CONNECTIVITY PROVIDERS BUT
NOT BECOME A “DUMB PIPE”.**



IT'S ALMOST LIKE THE MNOS HAD TASTED BLOOD, AND EVER SINCE HAVE BEEN IN HUNT FOR THE NEXT KILLER APP WHICH CAN PROVIDE UNBOUNDED GROWTH.

It's almost like the MNOs had tasted blood, and ever since have been in hunt for the next killer app which can provide unbounded growth. This has also been well recognised by the vendor community who have been working on various value-added services and solutions that MNOs could adopt. To be fair, it really is the vendors who launched great value-added services ranging from Ring tones to call back tunes, to games etc. However, as the phone eco-system evolved, operators slowly found themselves being taken out of this value chain of providing VAS to end customers. Today although there are a plethora of value-added services available but in majority of the cases consumers get them from the device (Google Play for Android and App Store for iOS). The Mobile operator has been totally disintermediated, which means the hunger and desperation for growth has only increased.

With spectrum costs on the increase, technology generation shifts happening every 10 years, and stock valuations on the decline, MNO's really seem to have been running out of ideas. This has put senior management under a lot of pressure to show growth, which is not easy with penetration rates in most markets at over 100%.

Unfortunately, this has led to the slow shift where operators over the last decade or so have been getting seduced by "hype". As an example, all you have to do is google "IoT Growth trends" and you'll find 100's (if not 1000's) of free whitepapers telling you how the market is worth a gazillion billion.

The industry has started to put the cart before the horse, instead of the operators shaping services and telling vendors what to build based on their vision for the industry and understanding of their own customers, it's the vendors constantly coming to them with the "next big thing".

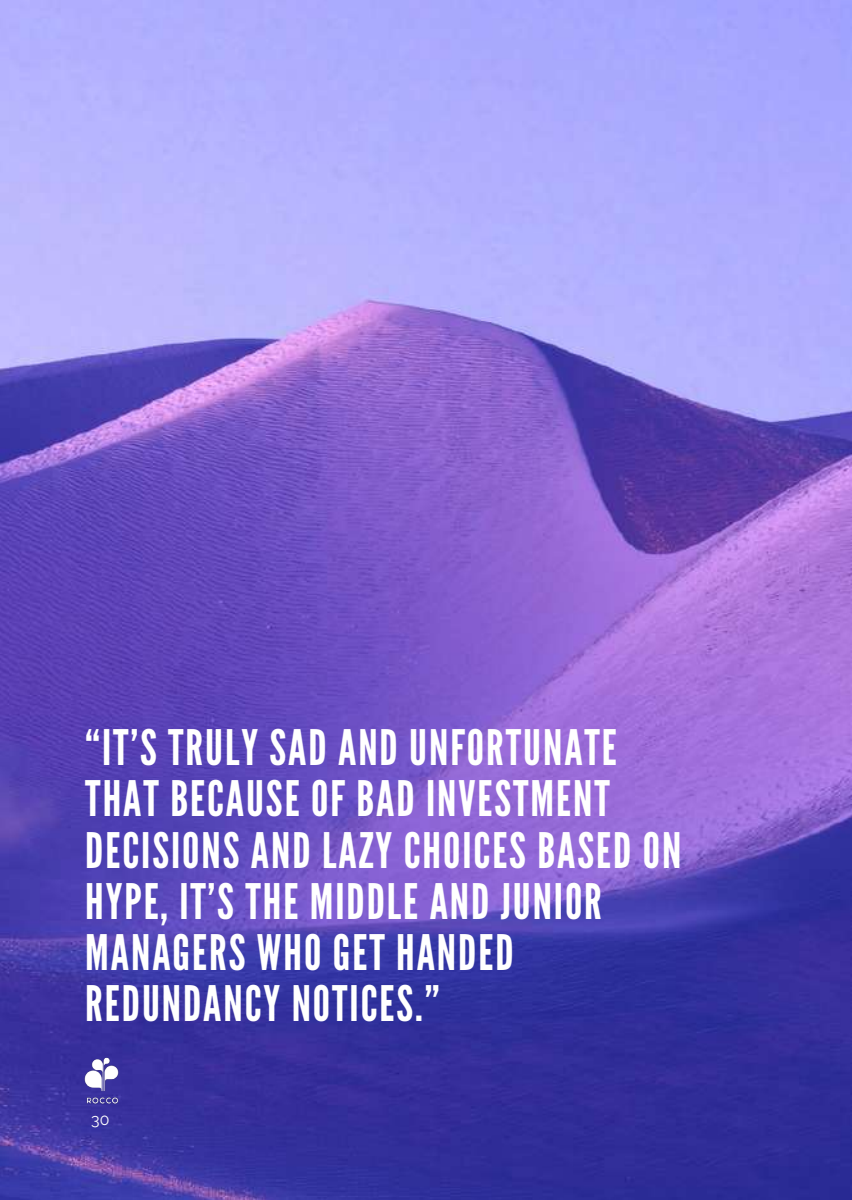
Initially, it started with the vendors publishing white papers asking the operators to jump on the bandwagon as this new shiny service X is finally going to take them to the promised land, and as this trend started to take hold, they went a step further, and now there are "research" companies who are more than happy to publish "free" white papers, promising you the land of milk and honey. For some reason, which is completely beyond me, instead of the operators asking "how do you know this?" ... they've gone "this must be true, because it's a research company saying this".

A large, semi-transparent silhouette of a whale is shown swimming horizontally across the upper half of the image. Below it, a classic dark-colored car is parked on a beach, viewed from the rear passenger side. The background is a soft-focus ocean with gentle waves under a pale sky. The overall color palette is muted, consisting of blues, greys, and soft whites.

**THE INDUSTRY HAS STARTED TO PUT THE CART
BEFORE THE HORSE, INSTEAD OF THE OPERATORS
SHAPING SERVICES AND TELLING VENDORS WHAT TO
BUILD BASED ON THEIR VISION FOR THE INDUSTRY
AND UNDERSTANDING OF THEIR OWN CUSTOMERS,
IT'S THE VENDORS CONSTANTLY COMING TO THEM
WITH THE "NEXT BIG THING"**



ROCCO



“IT’S TRULY SAD AND UNFORTUNATE THAT BECAUSE OF BAD INVESTMENT DECISIONS AND LAZY CHOICES BASED ON HYPE, IT’S THE MIDDLE AND JUNIOR MANAGERS WHO GET HANDED REDUNDANCY NOTICES.”



ROCCO

Here are a few examples, just as the pandemic hit and we were only a few months into it, a "research" company came out with forecasts that next year roaming would grow substantially! (of course, it dropped by over 70%), the same company forecast a massive growth in IoT devices ... the best bit is that they have zero experience in Roaming or indeed IoT. Another statistic recently getting tom-tomed around is that 5G Roaming connections will grow by 900%, so everyone must buy new analytics and fraud management tools! Great, yeah lets jump on to that bandwagon.

Over the years this has created a vicious circle, which goes something like this:

1. Vendor "collaborates" with a research company to publish a report with extremely healthy forecasts.
2. Both vendor and the research company freely distribute the research including through webinars and panel discussions.
3. This starts to be viewed as the potential light at the end of the tunnel and some operators jump on the bandwagon, with the vastly inflated numbers published, the business case looks like a no brainer.

4. Very soon, the competing operators also HAVE to jump on, as they can't be seen lagging behind.

5. When the promised return on investment starts to look like a fairy tale, the operator must cut costs to keep the shareholders happy.

6. And the easiest way to cut costs is ... you guessed it right, cut people!

It's truly sad and unfortunate that because of bad investment decisions and lazy choices based on hype it's the middle and junior managers who get handed redundancy notices.



**“WITH CONVERGENCE ON THE MARCH,
THIS TREND UNFORTUNATELY IS ABOUT
TO GET WORSE. WE’LL SEE MANY MORE
WILDLY INFLATED FORECASTS BEGGING
YOU TO INVEST.”**



ROCCO

With convergence on the march, this trend unfortunately is about to get worse. We'll see many more wildly inflated forecasts begging you to invest. So how do we break this cycle? ... Sometimes all you need is the basic rules my mother taught me as a child:

- **Rule 1: There is no free lunch:**
When someone gives you a free research paper, always ask who has funded it, and what could their interest be.
- **Rule 2: It's easy to smell a rat:** If numbers in a forecast look too good to be true, they probably are. Always ask for the source and methodology of arriving at that forecast.
- **Rule 3: Information is not the same as knowledge:** If a conclusion is being made based on some numbers or forecast, always ask based on what expertise and assumptions are the claims being made.
- **Rule 4: Garbage in, garbage out:** If a research company say specialising in Roaming, tells you that they think X Billion IoT devices will be shipped out next year, always ask for the source of their base data. To build a forecast like that, the research company must be connected to most if not all IoT device manufacturers. Are they?



Let's not kid ourselves, as an industry we have massive challenges ahead of us, most companies are trying to cut costs and we don't expect to see a reversal of this trend any time soon. But we **MUST do what we CAN do, rather than worry about what we can't do.** As we look to a future seemingly full of new technology, products and convergence, one of the first and easiest things we can do is base our decisions on credible research and insights and not exaggerations and hype.

Connect and follow Dhiraj Wazir on LinkedIn:
<https://www.linkedin.com/in/dhiraj-wazir/>





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**"WE
MUST DO
WHAT WE
CAN DO,
RATHER
THAN
WORRY
ABOUT
WHAT WE
CAN'T
DO"**



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TA LE NT

Industry Colleagues on the Move!

INDUSTRY
COLLEAGUES ON
THE MOVE!

Industry Colleagues on the Move!



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Industry Colleagues on the Move!

Telecommunications is a constantly evolving industry, with new technologies and business models emerging all the time. As a result, it's no surprise that many professionals in the sector are always on the move, seeking out new challenges and opportunities to advance their careers. In this section, we'll be taking a closer look at some of the latest movements in the world of Roaming, Interconnect, Messaging and Fraud and Security, as industry colleagues take on new positions and responsibilities.

In this section, we'll be shining a spotlight on some of the most notable individuals who have recently made a move in the sector.

To all of them, congratulations!



ROCCO



DAVID VIGAR

VP & GM, TRUSENSE,
A ROUTE MOBILE COMPANY



CHRIS LENNARTZ

VP PRODUCT AT
CELLUSYS



AMER SIRAJ

CHIEF REVENUE OFFICER, CARRIER
AND WHOLESALE BUSINESS AT GMS



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**CANDACE JOHNSON TALKS
TO JASON BRYAN
ON HER ROLE AT THE GTWN AND HER
INCREDIBLE JOURNEY THROUGH THE
TELECOMS WORLD**



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**New Frontiers:
A CONVERSATION WITH
A SATELLITE PIONEER**

*CANDACE
JOHNSON*

Photo credit:
Thaprawin-
thanasukhaphaisarn



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INTRODUCTION

On a side street, away from the bustle of Barcelona's famed Las Ramblas, I found a hidden gem of a hotel, a haven away from the congestion of the Mobile World Congress. Little did I know, this respite was merely a prelude to what would prove to be a truly momentous encounter. For, on this auspicious day, I was granted the privilege of meeting none other than the legendary "Satellady" herself - Candace Johnson.

Her list of accomplishments reads like a roll call of the who's who in the telecommunications industry: Founder / Co-founder of SES (Société Européenne des Satellites), Loral Teleport Europe, Europe Online, GTWN, OWNSAT, VATM, GBRW, Chair of Seraphim Space Advisory Board and Partner, Founding Vice-Chair of NorthStar Earth & Space, and ICC Executive Board Member. It's no wonder she graced the Fortune 2021 list of the Most Powerful Women.

And as we sat sipping our coffee in the quiet lobby of the hotel, I couldn't help but feel a sense of awe and reverence for this trailblazing icon.

It was all thanks to the Global Telecoms Women's Network (GTWN) that I had the honour of meeting Candace. Their tireless efforts to combat inequality and discrimination in the industry had caught my attention, and I was eager to speak with one of their leaders. And what a leader she was - with her boundless charisma and infectious energy, Candace left an indelible impression on me. But our meeting was about much more than just her impressive resume. It was going to be a great day of reflection, a momentous occasion to look back on a storied career that had revolutionized the industry, but more about that later.

As we delved deeper into her role at the GTWN and her incredible journey through the telecoms world, I couldn't help but be struck by her unwavering commitment to diversity and inclusion. For Candace, it wasn't just a buzzword - it was a deeply held belief that lay at the heart of her work. And in a world where progress can seem slow, her unwavering dedication remained a shining beacon of hope.

THE SATELLADY

Jason Bryan

Candace, how would describe the role of GTWN today?

Candace Johnson

I think what is really important to mention is that the GTWN is 31 years old, and we are a network. We're a peer-to-peer network. So, we fund everything ourselves. All our members have P&L responsibility. They are all CEOs, or owners of their own companies or members of the board, etc. Whenever we have an event, like the MWC Welcome Cocktail tonight at Casa Llotja de Mar in Barcelona, it's a celebration of, quite frankly, incredible women.

Whether it's Keri Gilder, CEO of Colt Technologies who is leading change across the TMT industry by pioneering the industry's first ever inclusion and diversity score with the TMforum.

Whether it's Bridgette Cosgrave, former president of Belgacom International, which became BICS.

Whether it's Myla Villanueva from the Philippines, I mean, she basically did the first e-elections in the world for a presidential election from the Philippines.

Whether it's Rebecca Enonchong Chair Emeritus of Afrilabs, a network of over 400 innovation centers in 52 African countries supporting over 15 million digital entrepreneurs.

Whether it's Lauren Cook who, has been the principal TMT advisor at the World Bank, in the Global Telecoms, Media & Technology Private Equity Sector. I mean, it just goes on and on.

Whether it's Lucy Lombardi, Head of Technical and Operational Partnership and



Contracts at TIM. After leading telco innovation for many years, she is currently using her considerable telco experience to introduce a new approach to governing partnership relationships and contracts.

Janice Hughes, CBE, I mean Janice is a kind of guru of telecoms, our GTWN Co-founder and Founder and CEO of Graphite Strategy Ventures LLP. Janice is also Founder of Spring Fibre - a new green fibre, building group in the UK that's already bringing a green fibre network to the smaller towns and rural businesses in the UK.

Sallye Clark, she's the number one satellite space attorney in the United States. She's on the Strategic regulatory counsel for AST & Science, a satellite system that will provide service to any cell phone for truly global, ubiquitous service; donations of satellite services to humanitarian aid and disaster relief programs in developing countries.

And the list goes on and on...

We try to serve as role models, and to inspire the next generation. Our mission is "to provide a forum for executive women active in telecommunications to get together and

"network"; to provide a role model to younger women managers active in telecommunications; and to evolve the global information society in a positive way."

We have always been at the forefront of change. You know, I think it's tremendously liberating to be sometimes the only woman on a board, I don't recommend it. But you know, you're not in the old boys' network. So, you can just do whatever you want. You can say whatever you want. You don't have to worry about pleasing anybody, because you're not in the network anyway, you know.

Last night, we had our GTWN board dinner, where we also then invite our mentees. I brought a young woman from Pakistan. Sallye Clark brought her mentee over from Washington. So, it is about being a role model. We are also, I call it a "brain trust", because we can reach out to any of our peers, and really say, well, what do you think about this? Do you have this experience? What would you suggest? And it's always excellent.

Just recently now, the chair of OfCom in the UK, has asked us to come and speak with him about what we think of the global

Telecoms ecosystem. I think you met Vicki McLeod, the editor in chief of GTWN's The Mobile Century magazine I mean, when you see it, it's just amazing.

I mean, it has so much substance, really talking about the issues, and then we're also publishing our call to action, which is, also amazing for digital inclusion for all. You know, we want to make a difference and we do we make a difference, so I think that it's very neat.

Viviane Redding is one of my dearest friends and is the recipient of our first lifetime achievement award from GTWN. When you think about what Vivian has done, be it the democratization of roaming, the safeguarding of data privacy, the promotion of Women on Boards, it just awesome. We have been working hand in hand for the last 40 years. She in the public sector, me in the private sector. She started 10 years ago the initiative to try to get more women on boards and the GTWN got behind her by creating the "Global Board Ready Women" Task Force. It took 10 years, but we you know, we achieved a lot. When we first started, we were aghast to realize that there were not any set criteria for independent directors.



It really was very much an "old boy's network" and Head hunters were not paid for finding excellent people (man or woman) to put on Boards. We canvassed the world's best business schools and governance professors to put together strong criteria and then we set up a review board to assess women independent board candidates against those criteria. In the first year, we found 8000 women, thus disproving the pundits who said they could not find any qualified women!

Jason Bryan

It sounds like an incredibly inspiring group, a force of intelligence and inspiration for many. As the world hurtles towards a future defined by interconnectedness, it's hard not to be awed by the incredible possibilities that the Internet of Things (IoT) presents. And yet, as we marvel at the sheer scope of these networks and the AI solutions they offer, it's worth pausing to consider a crucial question: is there enough diversity and inclusion behind these innovations?

Candace Johnson

I work in satellites you know. That's my big thing and so I have actually a larger view of IoT than most people do. Today, you can put sensors on everything. We're putting them on buildings, we're putting them on plants, we're putting them on people, we have optical sensors to look into space. The satellites allow us to gather all the data from around the world and to analyze the data using AI to give actionable insights. I am very pleased to say that there are a number of women entrepreneurs and executives in these various companies.

AI and diversity I think it's a little bit old hat. I think that people have recognised that there was a problem and have solved it. I am the Vice Chair of the Europa Institute in France also, which is the European AI Institute. Despite the great work there I also happen to think that AI and the associated problems of diversity are a bit overrated. What you put in is what you get out, it reminds me a bit of satellites, what you put

up is what you get down and now people are really making certain that the data sets fed into AI algorithms are not biased.

One thing I think is very, very interesting right now, is Quantum. I think quantum computing, quantum mechanics, physics, etc.,

is really starting to have people think in a different way. I am kind of a quantum person. It really is this kind of entanglement of subjective geometry.

"We have deep space, we have near space, satellites, and then we have the planet, and so all of this now needs to be connected."



**"SOMETIMES I GIVE SPEECHES,
AND I GET EVERYBODY TO
STAND UP AND TAKE OUT
THEIR MOBILE PHONES AND
SING,**

(SINGING)

**"I'VE GOT THE WHOLE WORLD
IN MY HAND" - WE REALLY,
REALLY DO. "**



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Photo credit:
Benjamin Voros



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Candace Johnson

For years I have explained my work in Space from using Satellites to provide "Universal Access" to the world for television, telecommunications, and the Internet to then using satellites to "Access the Universe", via the sensors and IoT we were just talking about, i.e. to do earth observation, climate measurement, space debris, etc. I am very proud of the satellite systems I created or helped create such as SES, Iridium and now recently Oceania Women's Network Satellite (OWNSAT) - a group of amazing women around the world who got together to help finance Kacific bringing high throughput broadband Internet to the Pacific Islands — to provide "Universal Access" to the world's citizens.

"Networks for the Universe": Now that we have the James Webb telescope, and are starting to understand, a little bit more about our origins and, and deep space. I'm working now, on what I call "Networks for the Universe. We have deep space, we have near space, satellites, and then we have the planet, and so all of this now needs to be connected. We will have communication, logistics, transport, and energy networks. ed solar power, which I think, you know, if we crack it, I mean, this is being able to bring the solar power down to the earth, which we can do with microwave. I think it is this type of thinking and working to bring about change that really will have 50 an impact.

Jason Bryan:

For those in the know, there's another name by which you are affectionately known: the Satellady. So where did this moniker come from? (As I ask the question, I can see the nickname is more than just a catchy title. It's a reminder of her roots in the industry, and of the many challenges she has faced and overcome along the way).

Candace Johnson

It was Dame Frances Cairncross, https://en.wikipedia.org/wiki/Frances_Cairncross. She was a journalist for many years at The Economist. She interviewed me for Face Value in 1986.

I grew up with satellites. When I was five years old in 1957, my father and mother gave me a toy Sputnik to put on the Christmas tree with Santa Claus inside of it. I was totally inspired. I always tell everybody, people talk about invention, imagination. It's about inspiration really. My dad was at the time in Paris, and he was working on the troop forward scatter network, which is kind of like satellites and then we went back to the United States.. He was asked to work with President Kennedy for the Apollo mission and President Johnson, for the Apollo and the first satellites, so he did the first satellite for the United States and then when he retired from the USAF, to do the first private satellite system in the world for Western Union, WESTAR I - IV.. So, you know, I grew up with this.

I have five degrees in music so I'm a musician and so for me, I am all into networks. I happen to think that a Bach Fugue is the most beautiful network. Every single note is about object-oriented technology, every single note has value add. Then it gets more value add when it is connected with another note and then at the end, you have the most beautiful message - which I think is what networks are all about.

I went to get degrees in music because I learned everything at home, while it was happening.

I grew up with people like Werner von Braun, the founder of the X.25 Data Networks, Irwin Jacobs, founder of Qualcomm, Vint Cerf - the founder of the IP protocol. They all came to our house, I grew up around amazing people.

Later on, it was wild. I was the executive producer of Washington DC classical music station and I was doing all these great programmes. I thought people in Washington are listening to this, I should put this on satellite. So, I did, I got some capacity on Westar. My father was no longer with them, but it was his satellite system Weststar and I started broadcasting nationwide. Then I went to a major programme syndicate for television and radio and I did the same thing there putting it on satellite. Then I basically had an exit, you know, even though people didn't talk about exits 40 years ago.

At that time in 1981, I had also married my husband, who was the ambassador of Luxembourg, to the United States. This country Luxembourg had three crises - a steel crisis, a broadcast crisis, and a crisis with the monetary union they had with Belgium. They were looking for new economic pillar. So, I told the Prime Minister, you know you could build a satellite system. This was June 1982. For me this approach was normal, but it wasn't normal for anybody else.

So, yes, we started it. I cannot begin to tell you how hard we worked and fought, but it never occurred to me that we weren't going to do it, you know? We basically went against every single monopoly, the telecoms monopolies, the broadcast monopolies, BUT we were offering "Freedom of Choice" in television viewing and no one could be against that. People say I was a monopoly breaker, but I was just building something that was going to be better.

The name of the satellite system I helped to create was SES (Société Européenne des Satellites) and it was known in the early years by its trademark, "ASTRA". At the time, there were mostly only government monopoly broadcasters and government monopoly telecommunication companies. The national governments had all come together and decided to each launch "Direct Broadcast Satellite Systems (DBS)", products of the "industrial policy" at the time, where national governments favored and gave orders to their national aerospace companies. The problem for the new "wannabe" private broadcasters and new players was that each of these "national DBS systems only had 4 channels. Three were reserved for the national government monopoly broadcasters and one was available for private broadcasters. Also, because these were government R & projects and had only 4 channels, they were very expensive!



Photo credit: Kourou, French Guiana, on Dec. 12, 1988. The photo was taken on the eve of the launch of the first Astra satellite, made by SES.



Photo credit:
Thales Alenia Space

As a result, we got every single private broadcaster, because none of these companies could get on the Government monopoly satellites and none of them could pay the horrific prices being asked.

Not only that, less than 2 years after they were launched ALL of these government monopoly satellites failed! The TWT's (Traveling Wave Tubes of 250 watts) were too strong for the rest of the satellite and they all burned up. wanted the government sponsored satellites, all of which failed. So, I started that, I like to start things, and I'm not a good manager. So, it takes about three years to get something up and running and then I go on the board. That's why I'm on so many boards!!

We started SES in 1983 and it was incorporated in 1985 and we launched our first satellite in December 1988. Even by today's standards, that was/is very quick. It is important to remember that in 1983 there were no venture capital companies, there were no PE companies. We were doing everything private. You know, it's rather amazing. It really is.

So then, of course, you know what happened, the wall fell. And we were the only ones who could cover all of Europe. It never occurred to me, but of course we were going to cover all of Europe, that's the beautiful thing about satellites is that they provide instant infrastructure.

In 1992 when the digital revolution came, we had become so big in Europe that the people who we had helped get their television programs onto satellite, Rupert Murdoch, Leo Kirch, and Silvio Berlusconi tried to take over SES.

It was a very big and lonely fight, but I was able to have this adverted. It took a year, but in so doing, I was able to keep Europe's skies open for Freedom of Choice and to continue to let new players access and have capacity on SES

Then I decided that this could never happen again, and I had to protect it, so I decided we needed to become number one in the world, so we did. I put together the plan and it's either buy or build so I architected a global mass consumer broadband network.

In 1998 - 1999, I architected SES Global, making SES the world's largest and pre-eminent satellite system, which it still is today. One of the reasons I did that was to make certain that no one could ever try and take over SES again and that it would continue as an independent satellite system, offering Freedom of Choice to the world.

Jason Bryan

As the world of telecommunications continues to evolve, we find ourselves on the cusp of a new era. With the advent of low earth orbit (LEO) satellites, we're seeing a shift in the way we think about satellite systems. What do you think of satellite systems today?

Candace Johnson

Well, you know, I was also Vice President worldwide of Iridium from 1994 - 1996. Iridium was the precursor to StarLink, OneWeb and all the other LEO constellations today. By 1994, I had done satellite television, satellite telecommunications, satellite internet and now I wanted to do satellite mobile. Iridium was absolutely a beautiful network.

At the time, people asked, "So low earth orbit satellites (LEO's) even work?"

Well of course, they worked. How did I know this? Because my father was head of all military communications for the United States and the military were using the low



Photo credit:
Clarisse Meyer

Earth orbit satellites for years as spy satellites. Iridium was one of the first systems to commercialise military technology. It was a big leap forward for everyone - the civilian community and the military community.

I think it is important to remember that having I grown up in this family where telecommunications, satellites, main frames, fibre optics for the battlefield, etc. getting signals from the moon to the earth, etc. were daily fare, I am never surprised by technology.

Iridium was and is a precursor for so many things that are happening today in space, be it privately financed, market-oriented projects like SES (see above), be it commercializing military and government technology, mass-manufacturing of satellites for constellations, etc.

So, when people talk today about "New Space", I have to laugh.



I have never ever done anything but "New Space" for the last 40 years, I have never done a government sponsored project. I just don't do it. I have always only done privately financed commercially oriented satellite systems such as SES, Iridium, and Kacific, launchers, such as ILS in 1995 - the first ever US-Russian launch joint venture between Krunichev and Lockheed Martin, and satellite service companies such as Teleport Europe in 1990 which was sold to Loral in 1997, with me keeping my original 1%.

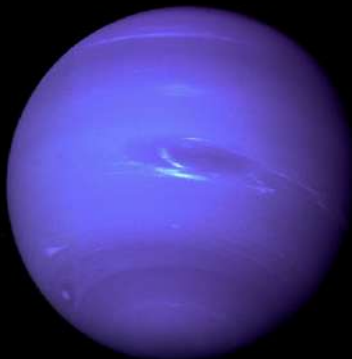
This is why it is such a joy for me today to be Partner and Advisory Board Chair of Seraphim Space, the world's largest space tech venture fund and to continue my mentoring and angel investing. I get to see so many fabulous young space entrepreneurs presenting solutions to make our world better, be it earth observation for the environment and climate; be it low-cost launchers to democratize access to space;

be it creating and building their own Space Ships such as The Exploration Company enabling micro-gravity experiments for the pharmaceutical and new materials industries, be it creating and building their own "sustainable pods for life on Space and Earth" such as Interstellar Lab, who was just named one of the 5 winners of the NASA Deep Space Food Challenge. By the way, both of these latter companies have female founders!

I'm also Founding Vice Chair at NorthStar Earth and Space, which is doing space situational awareness, space domain awareness and space traffic management to keep space as a safe, peaceful, accessible resource for all. tracking objects intended and unintended objects.

In 2022 Candace wrote the G 20 article: "Using Space and Space Technologies Together with Blended Global Finance to meet the SDG's and International Climate Goals". She wrote

Photo credit:
NASA



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"Space is ubiquitous. In the digital world and thanks to IoT, sensors, AI, robotics, etc. our world and our planet have become connected via space and in space. It is not an overstatement to say that today our world and our universe are dependent on space, whether it be for connectivity, observation, analysis of all things, people, weather, mobility, infrastructure, environment, climate change, etc."

"Just as we are recognising that the earth's resources are not limitless, and that we must limit and if possible eliminate pollution and degradation of our earthly environment, we are now understanding that space is also a limited resource which must be shared equally amongst all of the world's population, so that some countries, in particular the emerging "Space Faring " ones are not excluded from reaping Space's benefits."

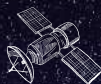
Satellites fulfill every single one of the Sustainability Development Goals of the UN, so we have to make certain that it remains open as a resource for all. Space is like the ocean. It isn't endless, people think it is but it isn't and we have to remember to take care of it, use it correctly.

Recently, there was an article in Fortune. It started out about me, and I said, that's ridiculous. You know, there's so many wonderful young women in space. So, I think I got 10 of them, the article ended up being called "Ladies who Launch". Isn't that fun?

And, BY THE WAY, "launch" vehicles, be they from women or men, are truly very important for space!

"Space is like the ocean. It isn't endless, people think it is but it isn't and we have to remember to take care of it, use it correctly"





In 2022 Candace wrote the G 20 article: "Using Space and Space Technologies Together with Blended Global Finance to meet the SDG's and International Climate Goals". She wrote

“Space is ubiquitous. In the digital world and thanks to IoT, sensors, AI, robotics, etc. our world and our planet have become connected via space and in space.

It is not an overstatement to say that today our world and our universe are dependent on space, whether it be for connectivity, observation, analysis of all things, people, weather, mobility, infrastructure, environment, climate change, etc.”



“Just as we are recognising that the earth’s resources are not limitless, and that we must limit and if possible eliminate pollution and degradation of our earthly environment,

we are now understanding that space is also a limited resource which must be shared equally amongst all of the world’s population,

so that some countries, in particular the emerging “Space Faring” ones are not excluded from reaping Space’s benefits.”

With the new launchers, we are starting to see a true democratisation of space. This is because the price to launch a kilo has gone down from 2 million to 100,000. So, the digitalisation and miniaturisation of components is bringing about a true democratisation. Kids can do their own cube sats, they can do their own launchers, they can do their own nano SATs. And you do have in certain instances, nano SATs and small sats that can do what GEO sats can do, not everything. It is exactly like going from a mainframe to a smartphone. So, this is great, you talk about diversity, it's really opening up the ability to use space and have solutions that can lead to other ideas. I'm thrilled as chair of Seraphim space, I think we've invested in just about every single cutting edge technology because of course satellites are the best way to do that. Now satellite going directly to a cell phone without anything, I mean a normal cell phone. One of our portfolio companies AST Mobile has just premiered the world's first ever direct satellite communication with a normal terrestrial cell phone

Jason Bryan

Based on all the experience you've had, all the different amazing projects you've been involved with so far and the positions you've

held in companies, what piece of practical advice would you give to women today who want to become entrepreneurs?

Candace Johnson

I always say, choose your "weapons". I do "Space", other people do "Mobile", still other people do "Data Science", etc. It does not really matter as long as you do whatever you are doing well and you make an impact on the world for the better. I call this "Personal Responsibility". You must have a personal responsibility to realizing your vision, to your stakeholders, to the environment, and to yourself. It is what makes you get up in the morning.

I also tell everyone that you must be true to yourself and to think big, because even if you only achieve half of it, it's better than if you thought small.

Sometimes when I give speeches, I get everybody to stand up and take out their mobile phones and sing the song "I've got the whole world in my hand" - we really, really do.

Jason Bryan

Excellent Candace, thank you so much. It's been truly wonderful to meet you.

Candace Johnson

Thank you so much, Jason.

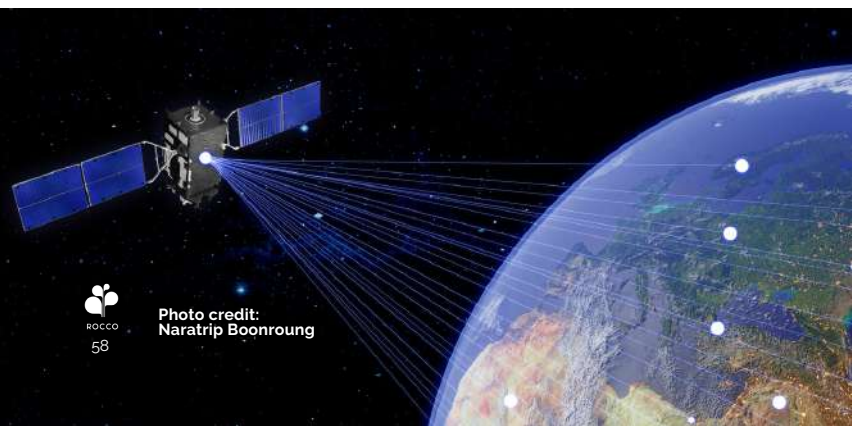


Photo credit:
Naratrip Boonroung

Photo credit:
GTWN



POSTSCRIPT

As the sun began to set over the vibrant city of Barcelona, the air was thick with anticipation. For, at the evening event of the Global Telecoms Women's Network, held at the Golden Hall, Casa Llotja de Mar in Barcelona, a special moment was about to unfold. And at the heart of it all was the inimitable Candace Johnson.

Earlier, I had alluded to the significance of this day for Candace. For, at the event, she was to be bestowed with the GTWN's Lifetime Achievement Award - a testament to the countless contributions she had made to the industry over the years. And it was none other than the former EU Commissioner and VP Viviane Reding who presented her with the award on behalf of the Board. Viviane said "Candace is known for three things MDS, Music Diplomacy and Satellites", with regards to Music "Like all talented musicians, she knows how to study a score, prepare the instrumentation and deliver an inspiring performance, all relevant skills when forming a new company".

It was a fitting tribute to a woman who had carved out a career that spanned multiple industries and achievements. And yet, even as she basked in the glory of this well-deserved recognition, it was clear that her dedication to the industry burned as brightly as ever. For Candace, it was not just about the accolades - it was about a deep-seated passion to make a difference in the world of telecommunications. In a world where progress can seem slow, where change can feel elusive, Candace's unwavering commitment to the industry was nothing short of inspirational.

So, as the night wore on and the celebrations continued, I knew one thing for sure - Candace's legacy would continue to inspire generations of women to come. For her impact on the industry would endure long after the festivities had come to an end.



GENESIS

24th - 25th May 2023

Lisbon, Portugal

ROCCO Genesis is an event designed to bring three perspectives on the challenges our industry is facing: innovative ideas, strategic insights, and training.

Genesis 2023 will be the second live edition of the event as a continued effort made by ROCCO to showcase innovation after Virtual Genesis in 2020 and 2021 and Genesis 2022.



The TelcoBoost Talks is a series of 8 talks at Genesis 2023 produced by subject matter experts. They discuss the advantages and opportunities for MNOs in 2023.



The Innovators is a research initiative conducted by ROCCO to identify and provide visibility to the most innovative solutions from Vendors and MNOs in our industry. This initiative creates a much-needed space for awareness of what's happening industry-wide.

GENESIS *Hackathon*

The ROCCO Genesis Hackathon has created a new way to look at Innovation in our industry.

The hackathon focused on addressing two biggest challenges the industry is facing: SMS Pumping attacks and the automation of the testing process in Roaming. This Year Genesis hosts the final Shortlisted Solutions for the Genesis Roaming and Messaging Hackathons.



The MNOs and Vendors taking part in The Innovators will present to a panel of Lions who will give feedback to them live in front of the Genesis audience.



The official Visionaries Gala from ROCCO will take place on 25 May and it will be a dinner where we will present more than 20 awards to The Innovators 2023, the winners of the Genesis Hackathon and Tier 1 Vendors from our Vendor Benchmarking Reports. The theme of this year's gala is Black & White Cinema Stars.



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AGENDA

MEETING SCHEDULE 24TH MAY

	LOCATION	REGISTRATION OPENS AT	TIMING
24/05/2023	Pavilhão do Conhecimento Auditorium	8:00	8:00- 9:00
	Introduction to Genesis		9:00-9:30
	TelcoBoost Talk on RCS by Stuart Mitchell		9:30-9:45
	TelcoBoost Talk on CPaaS by Rob Kurver		9:45-10:00
	Panel Session		10:00-10:30
	BREAK		10:30-11:00
	Messaging Hackathon - Presentation 1		11:00-11:30
	Messaging Hackathon - Presentation 2		11:30-12:00
	Messaging Hackathon - Presentation 3		12:00-12:30
	LUNCH		12:30 - 14:00
	TelcoBoost Talk on VoLTE by Matthew Bisoffi		14:00-14:15
	TelcoBoost Talk on 5G and its adoption by Dhiraj Wazir		14:15-14:30
	Panel Session		14:30-15:00
	The Innovators - DTGC: 5G SA Roaming PoC Environment		15:00- 15:30
	BREAK		15:30 - 16:00
	The Innovators - SecurityGen: 5G Cyber-security Lab		16:00 -16:30
	The Innovators - Comfone: Phoenix Key2Roam		16:30- 17:00
	The Innovators - Syniverse: Evolved Mobility		17:00- 17:30
	END		

MEETING SCHEDULE 25TH MAY

DATE	LOCATION	REGISTRATION OPENS AT	TIMING
25/05/2023	Pavilhão do Conhecimento Auditorium	8:00	8:00- 9:00
	TelcoBoost Talk on Satellites by Daniel Dooley		9:00-9:15
	TelcoBoost Talk on Networks Convergence by Bruno Tomas		9:15-9:30
	Panel Session		9:30-10:00
	Roaming Hackathon - "III Innovators" - CKH IOD		10:00-10:30
	BREAK		10:30-11:00
	Roaming Hackathon - "MannekenBICS" - BICS		11:00-11:30
	Roaming Hackathon - "Precision Posse" - Cellusys		11:30-12:00
	TelcoBoost Talk on IoT by Lars K. Amdisen		12:00-12:15
	TelcoBoost Talk on AI by Ihab Al Shayeb		12:15-12:30
	LUNCH		12:30 - 14:00
	Panel Session		14:00-14:30
	The Innovators - RoamSmart: STEEROP (Steering Optimizer)		14:30-15:00
	The Innovators - Araxxe: Transit Carriers Monitoring Service		15:00-15:30
	BREAK		15:30 - 16:00
	The Innovators - Telcovas: Automated Roaming Assist (ARA)		16:00 - 16:30
	The Innovators - Comfone: ePayments		16:30 - 17:00
	Wrapping up the event		17:00-17:30
	END		

IN THE BEGINNING, PEOPLE CREATED TELECOMS



THE TELCOBOOST TALKS

“ The TelcoBoost Talks is a series of 8 talks at Genesis 2023 produced by subject matter experts. They discuss the advantages and opportunities for MNOs in 2023. ”

PRESENTERS & TOPICS



STUART MITCHELL

GLOBAL PRODUCT &
BUSINESS DEVELOPMENT
FOR RCS AT SINCH

**RCS - THE ULTIMATE
EVOLUTION OF SMS?**



ROB KURVER

FOUNDING PARTNER OF
THE CPaaS ACCELERATION
ALLIANCE

**HOW CPaaS IS CREATING
OPPORTUNITIES AND
CHALLENGES FOR CSPs**



MATTHEW BISOFFI

HEAD OF BUSINESS
MANAGEMENT, OPERATIONS
AND INSIGHTS, AT CKH'S
GROUP ICS TEAM

**VoLTE -
SO WHAT?**



DANIEL DOOLEY

CHIEF COMMERCIAL
OFFICER
AT LYNK

**SATELLITE DIRECT TO
PHONE - WHAT'S ALL
THE HYPE ABOUT?**



BRUNO TOMAS

CTO AT THE WIRELESS
BROADBAND ALLIANCE
(WBA)

**PRIVATE 5G & WI-FI 6E/7
CONVERGENCE -
DISRUPTION IN THE
MOBILE INDUSTRY**



LARS K. AMDISEN

BUSINESS MANAGER IoT
ROAMING AT
TELENOR IoT

**IoT RETAIL DRIVES
WHOLESALE**



DHIRAJ WAZIR

CEO
ROCCO STRATEGY

**5G AND
ITS ADOPTION**



IHAB AL-SHAYEB

VP OF TECHNOLOGY
AT LATRO

**ARTIFICIAL
INTELLIGENCE**



THE INNOVATORS

“

The Innovators is a research conducted by ROCCO to identify the most Innovative MNOs and Vendor Solutions in our industry.

”

SHORTLISTED TEAMS



**PAUL
FLANAGAN**



**FREDERICK
VAN DE WEGHE**



**PEDRO JOÃO
ALVES SEBASTIÃO**

**TRANSIT CARRIERS
MONITORING SERVICE**

araxxe
We help you harvest. Everywhere.

**PHOENIX
KEY2ROAM**

comfone 



The Innovators will be back again in 2024.
Stay tuned, registrations open in autumn 2023.



MAURO
MELE

ePAYMENTS



FRANCESCO
VOTTA

5G SA ROAMING PoC
ENVIRONMENT



MEHDI
TRIKI

STEEROP
(STEERING OPTIMIZER)



PUNIT
OZA

AUTOMATED ROAMING
ASSIST (ARA)



BRIAN
BEACH

EVOLVED
MOBILITY



DMITRY
KURBATOV

5G CYBER-SECURITY
LAB



GENESIS

Hackathon

**ROCCO is pleased to present
the first and revolutionary
Genesis Hackathon!**

“

We think we can all agree the Industry has some major challenges, some of which have been ongoing for many years. In our annual Genesis event, ROCCO brings together mobile operators, enterprises and vendors to unite to try to address some of these challenges.

”



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PRAKASH KUMTA
ooredoo®

Ooredoo presented the
Roaming Challenge: Simplify
the Testing Process

Participants

bics  INNOVATIONS.
OPPORTUNITIES.
DEVELOPMENT.

Cellusys® ROAM
... SMART



ERWANN ROBIN

BlaBlaCar

BlaBlaCar presented the
Messaging Challenge: SMS
Pumping Attacks

Participants

 Cellusys®
BSG bics

 infobip LANCK
TELECOM

“

The 3 shortlisted teams for the Roaming and
Messaging challenges will present their solutions at
Genesis. The best solution for each category will
receive an award at the Visionaries Gala.

”

www.roccogenesis.com/hackathons/



WIN AN EXCLUSIVE GENESIS 2023 T-SHIRT



Are you ready to showcase your creativity and win an exclusive t-shirt?

Raise your paddle and share your creative ideas during the panel sessions to win an exclusive Genesis 2023 t-shirt!

We're looking for fresh perspectives and innovative solutions to our industry challenges. Don't miss out on this exciting opportunity to contribute and walk away with a cool, exclusive t-shirt!

Be sure to bring your A-game and your most creative ideas to the panel session, and who knows? You just might walk away with the limited edition of the Genesis 2023 t-shirt!



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**ROCCO Genesis 2023
Commemorative T-Shirts**



ROCCO 100 IS A TIME TO PAY TRIBUTE



**ROCCO 100 will be back again in 2024.
Stay tuned, nominations open in autumn 2023.**





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implementations.

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VOX 360

DARE YOU ENTER?



LION'S
DEN



ROCCO

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LION'S DEN

A Vendor/MNO pitches an innovative idea/product/solution which could help the Roaming, Messaging and Interconnect industry to generate revenues or save costs, become more efficient or offer more quality solutions to end subscribers. They will present to a panel of Lions who give live feedback to them in- front of the Genesis audience.

THE LIONS
(PEOPLE FROM MNOS)
WILL RATE THE
INNOVATIONS.
THEN THE AUDIENCE AT
GENESIS WILL ALSO HAVE
A CHANCE TO RATE
THE IDEA.

HOW THE LION'S DEN WORKS:



Companies/Individuals pitch their idea to the Lions, showing with a maximum of 10 slides the full solution, its name, cost, uses, time to market, etc



The Lions will ask direct questions, debate among themselves the pros and cons of the idea and whether they like the idea.



Lions are intimidating, not always nice, you don't know how they will react, but they will ultimately provide good advice.



The Lions **will listen** with an **open mind** to each idea which is being pitched to them.



They will give honest **feedback/constructive criticism** stating why they approve or disapprove of the business idea/solution and provide a final opinion.



THE LION'S
DEN

THE LION'S DEN PRIDE



OBAID
RAHMAN
AXIATA GROUP



ANNELI JENNERSJÖ
LUNDBERG
CKH IOD



MOHAMED
FAWZY
stc



MIHAELA AMBROZIE
VODAFONE ROAMING
SERVICES



ENCARNAÇÃO
JESUS
NOS PORTUGAL



ROCCO



ROCCO
VISIONARIES
Gala

25TH MAY 2023

**DRESS CODE:
BLACK AND WHITE
CINEMA STARS**



VISIONARIES GALA: AWARDS CEREMONY - EVENING EVENT 25TH MAY

DATE	LOCATION	TIME	DRESS CODE
25th May 2023	SUD Lisboa Pavilhão Poente, Av. Brasília, 1300-598 Lisbon, Portugal	19:30 . . . 01:00	Formal black & White attire Theme: Black & White Cinema Stars
	The ROCCO Group will provide shuttle bus transfer from the Pavilhão do Conhecimento to SUD Lisboa.	AGENDA: <ul style="list-style-type: none">• The Genesis Hackathon awards.• The Innovators awards.• Tier 1 awards.	

About LISBON



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SÉ DE LISBON

Don't be surprised if you see a group of openmouthed New World tourists in front of the cathedral. This Romantic-style building is very, very old. Construction started in 1147 and ended in the first decades of the 13th century.

CASTELO DE SÃO JORGE

The hilltop was fortified even before the arrival of the Roman legions; in later centuries the castle walls were strengthened by Visigoths and Moors, before Portugal's first king, Afonso Henriques, seized them in 1147.



ROCCO

PRAÇA DO COMÉRCIO

Make Praça do Comércio your starting point for discovering the city and marvel at the most emblematic squares in Lisbon.



TORRE DE BELÉM

Take a moment to visit the Belém Tower, a UNESCO World Heritage Site and one of Lisbon's most striking monuments.



ROCCO

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THE ROCCO GROUP

Driven by **bringing innovation to telecoms**, our businesses each have unique industry roles, with distinct products and services but with the same core values behind them all. **We have built this capability to serve and make the telecoms sector prosper.**



ROCCO



RESEARCH



VENDOR
BENCHMARKING



MARKET
INTELLIGENCE



ROCCO 100



THE INNOVATORS

VISIT ROCCORESEARCH.COM



STRATEGY



STRATEGIC
PLANNING



ROAMING BUILD



ROAMING
360 AUDIT



INSIGHT
COMMUNITY



BESPOKE
RESEARCH



CONTENT
CREATION

VISIT ROCCOSTRATEGY.COM



TRAINING



ON-DEMAND
TRAINING



LIVE TRAINING



ON CAMPUS
COURSES



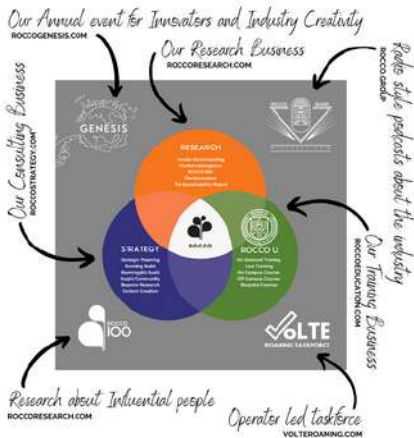
OFF CAMPUS
COURSES



BESPOKE
COURSES

VISIT ROCCOEDUCATION.COM





Nothing is so consistent in the telecoms sector as change. Faster, better, cheaper.. Our zeal to consume more quality content, wherever we are in the world at a faster pace has turned us into an impatient crowd that stares at screens almost uninterruptedly and fidgets angrily at the smallest sign of a connection hiccup. But we all know that professionally and as businesses **we always need to start preparing ourselves for the next step** because there's always another generation and a new buzz to get excited about.

ROCCO has been around since 2012 and from our conception we wanted to be a catalyst for **innovation with Research, Strategy and Education** that wasn't biased, sponsored or boring. We now have **three companies**, and we're not afraid to start a fourth, if there's something new to deliver and a challenge to be met.

We create multiple types of reports on Roaming, Messaging and Fraud and Security and we deliver on-demand training and strategic consulting which together provide a rich foundation on which to wage strategic excellence. In telecoms, we face multiple unimaginable scenarios, but we face them with actionable insights, clarity of direction and purpose.

ROCCO CONSULTING SERVICES (ROCCO STRATEGY)



BESPOKE INDEPENDENT
RESEARCH

STRATEGIC
PLANNING



BRAND PERCEPTION
TRACKING

RFI, RFQ, RFP
SERVICES



PRODUCT INSIGHT
COMMUNITY

ROAMING AND
INTERCONNECT
AUDITING



CONTENT CREATION

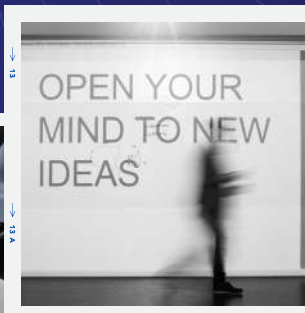
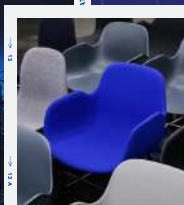
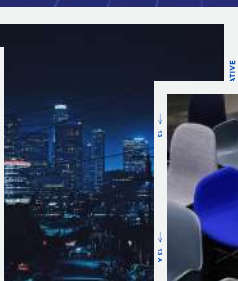
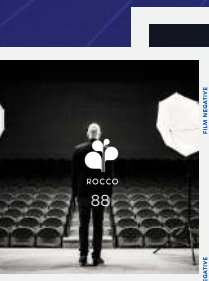
PRODUCT DESIGN
AND MARKETING



ROCCO STRATEGY, HELPING TEAMS WITH STRATEGY PROJECTS



Email us at HQ@rocco.group
www.roccostrategy.com



ROCCO RESEARCH REPORT MODULES & ADD-ONS



After 10 years since ROCCO was founded, the ROCCO Research team has decided to update the way our research is presented by including a module and add-ons scheme. The aim is to provide more flexibility to our customers in a way that they can choose the insights that are more suitable to their needs.

MODULE TYPE	DESCRIPTION
MARKET IMPACT	This module contains an analysis of a specific service from both the vendor and operator perspectives. With this information, the reader gets a deep understanding of the latest developments in service, what vendors are offering and what MNOs need.
ADD-ON TYPE	DESCRIPTION
VENDOR BENCHMARKING	Detailed analysis of vendor performance which contains all the KPIs, value indicators and ROCCO's admiration quads.
REGIONAL ANALYSIS	Analysis of vendor performance and MNO market insights from a regional perspective.
HISTORICAL ANALYSIS	Analysis of vendor performance and MNO market insights from a 5-Year perspective.

ROCCO+ SUBSCRIPTION



All ROCCO Research Reports for one year, Including:

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- All reports included.
- Single payment, single Invoice.
- All reports sent immediately after publication.
- 15% Discount on ROCCO U Courses.

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ROCCO NAMES THE TOP TEN VENDORS OF 2022

The third edition of ROCCO's annual report, The 23 Report, provides an overview of the areas that ROCCO analyses. Specifically, this publication includes the Admission Quads, which are competitor matrix models developed by the ROCCO Research team to assess vendor performance and prospects.

In addition to reflecting on the key industry trends of 2022 from ROCCO reports, The 23 Report also takes a look into the future. From the metaverse to LEO satellites, this publication discusses how emerging technologies can transform telecommunications and the way we live. ROCCO's lifelines also include a series of forecasts for key services in the areas of Roaming & Interconnect, Fraud & Security and Messaging.

This report contains **100+** pages and is aimed at

- MNOs who want to gain a deeper understanding of what other operators think about vendors
- Vendors who want to better understand how to maintain their competitive advantage or move up in their niche
- Other companies that want to know more about the key telecom milestones in 2022 and what they can expect in 2023





The reports and catalogues to empower your vision for 2023

The ROCCO catalogue contains upcoming research projects for 2023 in the areas of Fraud & Security, Messaging and Roaming & Interconnect. As ROCCO recently celebrated its 10th anniversary, the research team has decided to refine the way our reports are presented. In essence, in 2023, the ROCCO reports will present a module and add-on system that will allow our clients to select insights that have not been available to them before. All in all, our main goal is to improve the experience while maintaining neutrality as a core value.

The catalogue also includes all ROCCO U courses and modules. ROCCO's educational arm enables seasoned professionals and newcomers to the industry to learn about the core areas of telecoms and digitalisation trends. In short, our reports and courses will definitely help you to strengthen your vision for 2023.





ROCCO U



CATALOGUE



ROCCO U SUBSCRIPTION MODEL



ROCCO U



- Access the entire ROCCO U Training catalogue for 12 months.
- Train your team in Roaming, Interconnect and Digital Transformation.
- Open 24/7/365. Study at your own pace with the ROCCO U Online, on-demand training.



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Adding Value to SMS, Voice And Data



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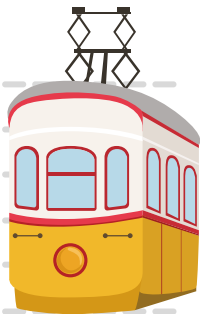


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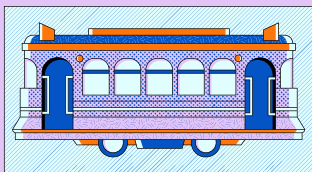


With branches in Benin, Botswana, Dubai, Ghana, Kenya, Malawi, Senegal, Zambia, Zimbabwe

IDEAS...



IDEAS...



✿ PORTUGAL ✿

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FOLLOW UP WITH: X ABOUT Y



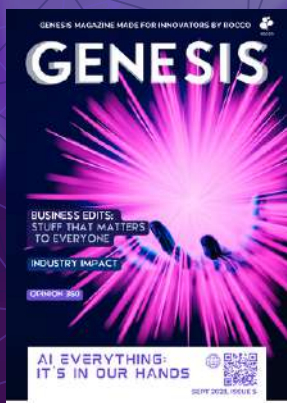
FOLLOW UP WITH: X ABOUT Y



ROCCO

THANKS FOR READING!

**GENESIS MAGAZINE IS
ALSO AVAILABLE
ONLINE AT
ROCCOGENESIS.COM**



**ISSUE 5
WILL BE PUBLISHED IN
SEPTEMBER 2023**

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OPPORTUNITIES OR TO
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THANKS FOR ATTENDING GENESIS 2023



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