GCCM MAGAZINE

Carrier Community
Global Telecom Club

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Google invests in Clean Data Centers

WOMEN in tech
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– 5 Real World Use Cases

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Janacom has been active in the wholesale carrier market since 2007, pioneering and deploying IP based voice termination services on a worldwide basis with most of the International Carriers. Today, Janacom offers its carrier partners a single source for niche call termination to fixed and mobile networks by leveraging its relationships with local partners and entities to provide a quality of service that is of the highest standard.

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- Highest quality call termination by means of direct routes using vigilantly selected suppliers that are actively managed with routing plans designed for all customer types.
- Tier 1's and MVNO's that are primarily quality driven and require advanced call features such as CLI and Roaming.
- Janacom generates over 20 million minutes monthly from its own Calling Card and MVNO that are present in several countries including UK, Spain, Holland, Finland, Norway, USA, France and many others.
- Janacom terminates over billion minutes per year to destinations carefully selected within our focus regions. Suppliers are chosen based on strict criteria that meet tightly controlled quality and pricing parameters.
- Driven by customer requirements and the demands of an ever changing telecoms market, Janacom opts for suppliers that offer exclusivity and price advantageous routes to all the destinations and emerging markets, giving particular focus to the Middle East, Africa , Asia, and Indian Sub-Continent. Choosing Janacom as your preferred voice termination partner, standing by our core values such as Ethics and Integrity, we will provide the best platform for your business to maximize profitability and minute growth.

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GCCM MAGAZINE

Keeping the Telcos up-to-date worldwide: insights from key-role players for key-role players

Dear cc-Members and Partners,

On behalf of my team and Carrier Community, I am glad to warmly welcome you all to our 15th edition of the GCCM MAGAZINE – MIDDLE EAST 2019 edition. Our magazine is designed for the telecom world, made for key-role players of the industry by key-role players. The current issue is especially dedicated to our 450+ Club Members in the Middle East attending our 6th annual MIDDLE EAST 2019 GCCM – Oman on on 25-26 November 25-26 2019 hosted by Diamond Lead Sponsor Omantel. Our special gratitude goes also to our Diamond Sponsor Xicomm; our Gold sponsors Sigma Telecom, Capital City Service and Qatama; our Silver Sponsors Acmetel, Lanck Telecom, Valuable and Qbr Telecom; our Associate Sponsors Telebiz, WIS, STC, Matrix, Nobel Telecom, Data Access, Digitalk, Platin Telecom, and Odine Solutions. Thank you for your trust and support while attending our conference and making it a success together!

As in every GCCM event, our exclusive executive panel sessions cover relevant industry topics worldwide and in the region. Our focus is on the challenges and opportunities in the rapidly evolving mobile market of the Middle East. We are very proud of the level of the moderators and panellists joining the sessions while supporting us to further improve the content of the event and sharing their views and knowledge with the guests.
Most importantly, selected panelists and global experts have contributed to this edition of the magazine, enriching it with current updates and unique expertise.

Our CC-TV service, launched last year to enable community members to share their company visions and latest products within the community, has been very successful. We envision CC-TV being the key place for members to watch and learn from industry experts and leaders. Therefore, we have decided to share with our readers our most enlightening interviews in GCCM MAGAZINE. Members can propose and book interview slots at the global CC- Events and via email at: info@carriercommunity.com. You can see our previous interviews at https://carriercommunity.com/cc-tv/

Please visit the CC- Event Portal for more information about upcoming events at www.carriercommunity.com

Thank you once again for your continuous support and trust and hope to see you in our 2020 editions!

With best regards

Wida Schmidt
CEO at Carrier Community

About Carrier Community

Carrier Community is an exclusive global telecom club and industry networking platform for wholesale telecom service providers, including Voice, Data, SMS, Mobile, Datacenters, VAS, MVNO, ISP, Cable Subsea, Telehouse and other related sectors. Since its launch our telecom club has qualified more than 8500+ members, representing 2300+ operators from more than 130 countries. Our members occupy C-Level, VP, Director and Manager Positions at incumbent, mobile and alternative and small operators.

Carrier Community offers the industry a meeting place where members can share ideas, contacts and business information. Members have the possibility to connect with their peers, have access to latest industry news, publish articles and advertise their companies on the club pubblications, attend various members conferences globally and other benefits.
Please visit different members portals to learn more.

www.carriercommunity.com

To become a member of Carrier Community, please visit: www.carriercommunity.com
To find out more about CC- Events around the world, please visit: https://carriercommunity.com/cc-events-calendar/

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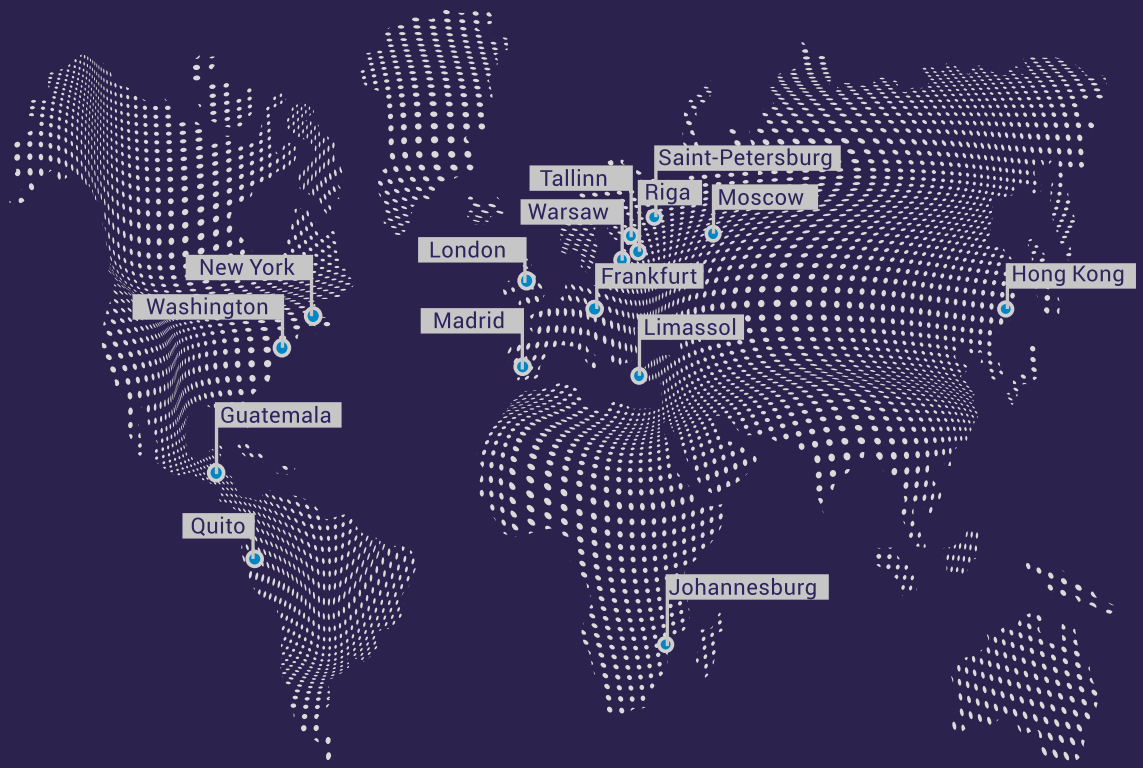

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- Routes trusted by the main industry players

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THE FUTURE OF DATA CENTERS

– Efficiency is the name of the game

I believe today there is almost a consensus that Digital Revolution still has a lot of return to give to the humanity and will continue to dramatically impact the business world. The adoption of new digital technologies as Cloud, IoT, Blockchain, Gaming, Virtual and Augmented Reality, Autonomous Vehicles, and even AI under digital (there are some analysts that believe that will work much better under other models like Quantum Computing) are still in the beginning of the exponential curve (especially if we consider a global footprint) and will still change/disrupt (and improve!) a lot the world that we know nowadays.

The base of this digital transformation was when we, as users, started to basically have the "power" in our hands. The power to buy/sell/lease, relate, make decisions, educate, take care of our health, do business in general, entertain and of course, communicate as well. This trend will not change for sure. We can move from digital to quantum or any other era, but the user/client will still want to have this power in their hands. There is no way back on that. Actually, we want to improve this capability and extend it for as many other areas in our lives as we can think of. We also want those services to dramatically improve quality and user experience level in the end.

Trying to bring this consensus future path to the Tech World, and more specifically to the Infrastructure World (Data Centers and Telecommunications), it is clear that this demand will still increase significantly, but it is almost impossible to preview exactly in what pace and how this demand growth will challenge and impact those industries.

However, talking specifically about Data Centers, and based in my observation of this industry for more than 20 years, I have at least 3 points that I would like to highlight regarding the future trends:

Scale X Edge Data Centers – Considering the new technologies technical architecture mentioned before, I have strong reasons to believe that both models will be necessary and will increase and coexist in the future. We can see clearly that some technologies (e.g. Clouds) need more a huge, powerful and dense centralized environment (Scale Data Centers) while others like Gaming/VR/VA also need powerful and dense environments but latency is the key point for their clients/users (Edge Data Centers). We can also observe that, for some of those technologies, both models will be equally relevant (e.g. Autonomous vehicles, IoT).

Renewable Energy – There is also a clear trend on this subject. The pressure on big consumers as Data Centers providers will continue to increase. Our planet will not endure all this predicted demand growth without changing the energy matrix to majority usage of renewable and sustainable sources of power as Hydroelectrical, Eolic and Solar.

Efficiency – This subject is more open and, without neglecting the previous themes, for me, the most relevant one. Considering the huge predicted growth and the potential impacts (good and bad) in many areas, it is impossible to plan new projects without an obsessive eye in this matter. The right use of the traditional trinomial of People, Technology and Process is the key aspect to achieve the necessary results. I would like to highlight 2 special efficiency applications:

Operations – Automation, Maintenance and AI usage – The effort

to operate 24x7 critical facilities is not simple. But many tasks and day by day activities are repetitive, and can, in many cases, be predicted. The right use of technology as Artificial Intelligence will help to deeply understand the collected data to promote improvements in the level of automation and also to be able to predict maintenance, which can save a lot of effort in the operations level and therefore a lot of money as well.

Technology – In the same path as Artificial Intelligence, we can see some other new technologies emerging to bring more efficiency to Data Centers. Understanding that Energy became the biggest input in this industry, some new technologies tackle exactly that and try to make a lot of difference. One, in particular, caught my eyes. We can see today a huge improvement in some Cooling Systems, bringing PUE (Data Center power usage efficiency metric) to levels never achieved before (less than 1.1 in some cases). This is extremely relevant because it can make the site a lot more efficient and sustainable and, in the same way, bring a lot of savings to Data Center providers and their clients. This is particularly crucial considering regions like Latin America and more specifically countries like Brazil, one of the countries with the biggest energy costs in the world nowadays.

As a summary, digital transformation and new technologies adoption are changing and disrupting the world we know, and it is just the beginning. As a consequence, there are many opportunities to be explored but the pressure on the first layer of Infrastructure providers will constantly increase. The ability to adapt and make the right partnerships are key. The pressure for the Data Center industry specifically will also increase and providers who are not prepared to evolve and promote Efficiency and Sustainability as part of the company's DNA will probably not be part of the next Data Center providers generation. On the other side, the ones who know how to address those points and implement a model to perpetuate that as a process, I am confident that have no reasons to be afraid of new eras and world transformations.

Marcelo Mendes
VP of Data Center Business Unit at Globenet

Twenty years of Sales, Marketing, Portfolio, Alliances, Business Development, Client, People, Relationship, General and P&L Management experience in large multinational and start-up companies in Technology segment, working with business solutions, products, services, hardware, software, new technologies (Big Data, BI, Analytics, Cloud, AI, Blockchain), outsourcing, BPO and consulting.

Significant experience building, managing, developing and leading high-performance teams, strategy plans, business turnarounds/transformations, start-ups and relationships with large and mid-sized corporations, sales channels and strategic partnerships.

Personal attributes developed on the last fifteen years in a leadership comprehensive career focused on growth and dealing with challenges and complex problems in executive position, management and advising.

CHINA MOBILE INTERNATIONAL SHOWCASES HOLISTIC iCONNECT SOLUTIONS SUITE AT GCCM LATAM 2019

China Mobile International Limited (CMI) recently held its inaugural Brazil iConnect workshop against the backdrop of GCCM LATAM 2019. With telecom delegates and members of the Carrier Community across Tier 1-3 congregating in São Paulo to discuss new business opportunities and the latest market trends, GCCM LATAM 2019 gave CMI the perfect opportunity to host its own event to talk about iConnect's potential to bring transformative changes to carrier's voice roaming business and beyond.

CMI is a wholly-owned subsidiary of China Mobile Limited, one of the world's largest telecommunications operators in terms of network scale, customer base and market value. Leveraging the strong support by China Mobile, CMI provides a full range of comprehensive international telecoms services which include data, roaming IDD, enterprise and innovative services and more. Committed to continually improving its carrier business and developing its services to cater to its customers, CMI works in close collaboration with its partners to ensure that their requirements are met to the fullest extent. The longstanding commitment to providing quality services has propelled CMI towards becoming one of the market leaders, and it now serves over 900 million mobile subscribers and carries over four billion minutes annually around the world via its own international network.

iConnect is a holistic carrier solution suite comprising a full range of solutions including Voice, SMS, Mobile, Data, professional service and China Connect. The suite is the easiest way for carriers to tap into CMI's extensive global network, which is built upon years of expertise and investment.

Mariana Candido, Sales Director of CMI's Brazil Subsidiary, kicked off the full-house workshop with greetings and introductions, then handed the stage over to guest speakers from CMI's HQ Carrier Business. Presentations covered the full range of iConnect offerings, which include:

iConnect SMS

CMI has direct interconnections with most Tier 1 carriers in APAC. This enables CMI to act as an SMS hub and provide seamless P2P and A2P message exchange for its global partners. Exclusive direct access to China Mobile's SMS gateway allows customers to deliver SMS around the world (with local coverage in China) via only a single SMPP connection. To ensure that customers have access to help whenever they need it, CMI assigns account managers to its customers and provides 24/7 networks operations center service. From CMI's global footprint, to exclusive gateway access, to competitive prices and round-the-clock service support, iConnect SMS helps customers boost traffic volume and gives them the peace of mind as they reach and engage with their target audience around the world.

iConnect IoT

In view of the massive opportunity in the IoT space, CMI offers a one-stop-shop solution for customers that are looking for global IoT connectivity. CMI supports both physical and embedded UICC for IoT and M2M equipment. It supports SIM profile provisioning and exchanges data through a secure over-the-air channel as devices

cross the China border, The open platform also adheres to industry standards. All APIs, SDKs, communications chipsets and modules pertaining to the solution are all certified by industry organizations, capable of handling various common use cases ranging from smart manufacturing to smart city applications with minimal compatibility issues. CMI is experienced in facilitating IoT and commercial application rollout, as evidenced by its sprawling and vibrant partner ecosystem. The industry-leading solution provides the best radio coverage and carrier-grade performance as well as SLA.

CMI'S EXTENSIVE GLOBAL COVERAGE GIVES ACCESS TO OVER 300 MNOS.

iConnect IPX

iConnect IPX is a cost-effective service that is designed to offer direct interconnection with global reach, and delivers guaranteed quality as well as capacity to help mobile operators capitalize on the OTT trend. CMI's IPX network is built on MPLS, the private backbone of IP networks. IPX can interconnect global mobile operators using a single high-speed connection to provide multiple IP-based services including VoIP, VoLTE, and GPRS roaming exchange. This single secure connection allows operators to strike a balance between cost efficiency and high quality of service.

CMI's extensive global coverage gives access to over 300 MNOs. The company provides a unique service encompassing CMCC and CMHK-appointed primary IPX provider and CMCC's exclusive Diameter signaling gateway. iConnect IPX offers flexible pricing, allowing each customer to grow their roaming business and capture the business opportunities that will keep their subscriber base loyal.

iConnect Voice

Available in three options: iConnect Voice∞, iConnect Voice+ and iConnect Voice, the iConnect Voice product suite provides the maximum flexibility for operators that offer roaming services amidst an increasingly difficult market.

iConnect Voice is designed to deliver high quality global routing at a reasonable cost. iConnect Voice+ is a highly flexible and competitively priced voice outsourcing proposal, perfect for carriers that want to outsource their retail traffic to CMI, who in turn provides customized routes and management services that are geared to the customers' business needs. iConnect Voice∞ is the premier voice offering, which lets customers send or receive unlimited incoming and outgoing traffic based on a revenue cap, affording the greatest degree of flexibility and scalability for handling increased traffic.

The iConnect Voice platform serves 900 million subscribers via direct connection to countries around the world with full interoperability. The far-reaching network also allows for economy of scale, which lets CMI price the world-class termination and tailor-made call routing services competitively, and help customers keep costs low and revenue high.

For more information regarding CMI or its products and services, please visit: https://www.cmi.chinamobile.com/

SMS...
IoT...
IPX...
Voice...

Cedric Gonin

Senior Marketing Director International Mobile Services at Orange

Florence Sebastien: It is my pleasure to meet you and to learn more about the new Wi-Fi Roaming solution from Orange. My objective is to better understand your professional career but also your expertise. Finally I need to know how you developed this new solution and what advantages it will bring for users.

Thus my first questions are: When did you start in telecommunications and could you give us some details about your experience and expertise?

Cedric Gonin: I started in telecommunications 20 years ago as a Presale Manager in Orange B2B division.

In 2008, when I became Orange Wi-Fi Business Unit Director, dealing with hotspot locations like hospitality, transport, cities..., driving the transformation from paid Wi-Fi to free Wi-Fi through partnerships and commercial deals maintaining the overall value.

I also developed worldwide roaming agreements with other Wi-Fi providers being board director treasurer and co-chair at WBA since 2008 and chairman of Wireless link in France.

I was also contributing to the global Orange Wi-Fi strategy and integration into retail offers for the consumer and B2B markets.

In 2013, I took charge of international data wholesale strategy and business transformation within Orange International Carriers. Since 2014, as Senior Marketing Director International Mobile Services, I am in charge of Marketing Strategy and Business for international Mobile services solutions including roaming enablers on IPX and messaging I am also Board Director of I3Forum (international carriers and IPX provider organization) and contribute as speaker in different events like GSMA, WAS, Wireless Global Congress, and similar conferences.

F: Really interesting and this is why it seems obvious that you were the right person to help Orange to build this solution. A solution in order to replicate the mobile experience over Wi-Fi. My next question is related to the details regarding this updated offer and notably, what issues is this new service from Orange International Carriers addressing?

C: Orange International Carriers has introduced its roaming Wi-Fi solution, Carrier Grade Wi-Fi Roaming, which allows users to take their mobile ecosystem with them across the world. Orange Wi-Fi Roaming facilitates seamless Wi-Fi roaming, anywhere, and extends roaming data coverage on land, sea and in the air.

Wi-Fi is everywhere today and it's a standard feature in all mobile devices. Customers are requesting Wi-Fi connectivity for lower mobile data consumption and to facilitate the performance of the APPs on their smartphones.
Users expect seamless access to Wi-Fi networks and Wi-Fi technology is now mature enough to offer the same customer experience as mobile networks, including high quality, secure access. More than half of smartphone data traffic uses Wi-Fi, and this percentage is growing. The end-users' experience must continue to improve and become increasingly standardized across all devices and all geographies.

Mobile Network operators have moved towards a Wi-Fi offload strategy, and technical studies have recommended that Wi-Fi technology has now reached "carrier-grade" characteristics. So, we are seeing that as the ecosystem evolves, competitors with disruptive business model are taking hold of the market. In response to this situation, MNOs are increasingly supporting the seamless handover between Wi-Fi and cellular networks (3G/4G).

F: Really interesting but what is innovative about the Orange Wi-Fi Roaming Solution?

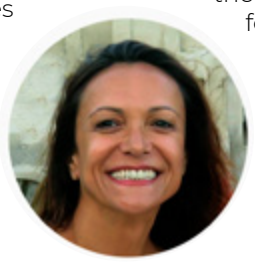
C: Orange Wi-Fi Roaming is a solution that needs no username/password authentication, and thus ends the frustration of roaming users who have experienced inconsistencies in service and connectivity. It is a seamless, end-to-end roaming experience where SIM-based authentication uses the mobile roaming process, meaning that devices switch automatically between Wi-Fi and mobile, to offer the best roaming quality and improved security. International roaming charges and complicated log-in procedures, are therefore eliminated and users have unrestricted and unlimited permanent data access which is managed automatically by their devices. The carrier grade Wi-Fi also provide cyphering of radio link which prevent from being watched by third parties like on plain free Wi-Fi.

The transformation of mobile networks has created opportunities for innovative Communications Service Providers to embrace new business models and revenue streams.
With new roaming agreements and benefiting from Hub model advantages, Orange Wi-Fi Roaming is integrated as part of a complete offer. For Mobile Operators, this solution addresses silent-roamers, improves user experience and saves on outbound roaming. For Wi-Fi Providers: Inbound roaming is increased and the solution is easy to implement. For end-users, the solution provides end-to-end, home routing coverage, simplicity, security and indoor coverage.
Orange is the first provider to offer seamless roaming over Wi-Fi solution. It is a "home routed" product with full roaming connectivity. Orange brings a mobile roaming, end-to-end user experience to Carrier grade Wi-Fi reproducing the Mobile Network experience.
This Orange solution is the ideal way to connect to trusted Wi-Fi networks and Mobile Network Operators with the highest quality and best customer experience for more flexible roaming package offers and lower costs.

"Customers will see improvements in their roaming experience with no restrictions of coverage in a single, transparent process."

F: But more specifically, how will this affect the customer journey?

C: The 'always-connected' attitude of customers means that carriers seek services that provide the best data access connectivity when roaming, on land, in the air or at sea. Orange's Wi-Fi Roaming solution for international travelers offers a unique advantage by integrating the carrier's home network functionality into the experience. End-users benefit from the same roaming experience and identical quality of service and security they would enjoy in their home country. Customers will see improvements in their roaming experience with no restrictions of coverage in a single, transparent process. Unrestricted connections and the advantages of identical usage abroad, as at home using Wi-Fi and mobile, allows the device to remain connected as-needed.



Using tunnelling over Orange's worldwide IPX network can truly create a 'home-routed' experience. This end-to-end home routing solution duplicates 3G and 4G architectures. Additional outgoing extension of roaming coverage means a greatly improved service for subscribers.

F: My last question is to better understand, how will this service evolve and what are the next steps?

C: Orange International Carriers offers a comprehensive set of solutions for security and anti-fraud, for Internet and bandwidth, mobile services and voice. We continue to innovate for a unified, 360° customer experience by bringing customer-centered solutions and Orange Wi-Fi Roaming is already the best possible quality of Wi-Fi experience : on Land, at Sea and in the Air. We respond to multiple, changing customer needs with a global, positive approach and in this age of convergence when carriers are preparing to deploy new 5G services, Orange International Carriers is ahead of the game. Carrier Grade Wi-Fi Roaming offers a stepping-stone into the future of Mobile services and it will be the platform for facilitating the continued evolution. The following challenge will be to address the Internet of things revolution through Wi-Fi connectivity as well.

Florence Sebastien

Based in Paris, France, Florence is an experienced New Business Development Professional and Relationship Broker with deep expertise in the telecommunication industry. After a Master in International Trade (Paris II), she joined Telecom Italia during 10 years. She founded FSE Consulting 8 years ago to help companies to build market positions by locating, developing, defining, negotiating, and closing impactful business relationships.

Identify and interpret market trends, as well as track individual contributors and their accomplishments to seek business deals. Contact potential partners, discover and explore opportunities to help companies to close new business. Develop negotiating strategies and positions by studying integration of new venture with company strategies and operations, examining risks and opportunities, and estimating partners' needs and goals.

HotShot interview: The transformation of the wholesale business

Bankim Brahmbhatt, President and CEO of Bankai Group, talks with Isabelle Paradis from HotShot about the transformation of the wholesale business above and beyond commodity towards enterprise voice.

Isabelle Paradis: I'm joined on the hot seat today by Bankim Brahmbhatt, president and CEO of Bank I Group. Bankim, welcome to the hot seat, I'm very happy to have you here, as I have been wanting to interview you for quite a long time

Bankim Brahmbhatt: Thank you, same here.

IP: Bankim, I don't know if you agree but I think the wholesale business is transforming a lot and it's transforming above and beyond the community business even. What do you think? How do you think the wholesalers should evolve to return to growth?

BB: I think whoever is considering still the wholesale as a community business they are mistaking because for in my view since last the four or five years wholesale is transforming towards more digitization and if carriers are not going to focus more on a quality-centric business, competing OTTs and operators also has to work on really on their wireless network because since many years what we are facing is that calls are getting disconnecting on the wireless network itself and that's why OTTs are getting more business. Now I think that operators are becoming serious to improve their wireless network and in order to increase their termination volume for the country and I see a great opportunity going moving ahead if carriers are willing to adapt technology along with the voice business creating a right ecosystem and focusing more on an enterprise voice because enterprise voice is still growing so I see the contribution from enterprise voice is more getting into wholesale voice so I don't think wholesale voice is going to die but at the same time, creating a right ecosystem for the business is very important.

IP: I agree with you in regards to the enterprise voice: I think it is a good opportunity for the wholesale business. And what do you think the whole Celica system will look like in five years? From my point of view I think it will look very different but what's your view?

BB: Based on my experience of 18 years what we are observing is that every year a hundred of carriers are coming into the market, so I see there is no more entry for the new carriers because it is difficult to share the margin so if you see the margin between origination and termination it's like - as an example, if you take 15% margin and it has been shared by 7 to 8 carriers earlier now it is reduced by 2 to 3 carriers: this is what we observed during this eighteen years. So what we are trying to do is to create a technological ecosystem to reduce the distance between origination and termination and to add value to the enterprise voice by providing value-added services. These strategies will definitely create a good margin for us and if some other carriers adopt the same methodology they may get also chance to contribute in the market.

IP: How about Bankai? How are you transforming yourself to lead in this new type of ecosystem and in this new wholesale world?

BB: We are trying to work on creating ecosystem for a global carrier relationships since many years and we are observing the market but at the same time now we recently launched a bridge voice platform in which this is one of phase one of our project where we are trying to create a settlement platform for carriers and operators and we are also coming out with blockchain-based switching and building on that platform. Earlier, we tried to become a carrier neutral but then at the end I thought that carrier business is all about investment and a maintaining quality game. We have already done a launch of a bridge Pluto but, moving forward, you will see a great achievement from Bankai group: we will contribute hugely in the carrier business.

IP: I like to hear from you "platform" and "blockchain": a lot of the buzzwords at the moment, a lot of development so it's very interesting. Thank you so much for joining me on the hot seat today!

Bankim Brahmbhatt,
President and CEO of Bankai Group

In the telecommunications industry since 26 years, Bankim Brahmbhatt took over the reins of the Panamax Group. With the strategic move over past 10 years, by adding various product, service portfolio, business verticals, acquisition and partnership, he has successfully managed to create multinational business operation. He serves as President & CEO in Bankai Group of companies which comprises of several strategic business units, located in different countries globally, performing various business verticals in domain of Telecom Technology and Services.

5G success depends on new operator partnerships and services

By Mike O'Brien, Group Vice President, Corporate Development and Strategy, Syniverse

This year, a major technology shift has finally begun. After many years of development, the first commercial rollouts of 5G have started. This technology's capabilities promise to empower a bold new era of mobile that will enable things like self-driving cars, self-monitoring buildings, wearable items, and industrial product sensors, just to name a few. And all of this will be connected to the next generation of mobile networks.

To take a closer look at what this new future will mean, Syniverse recently conducted a study to assess one of the big unknowns with 5G: how will mobile operators actually begin to make use of 5G to provide new services for companies, and how important a part will these services play in operators' business models? To find this out, we partnered with Heavy Reading to complete a global survey of operators and better understand their 5G preparations, and the results were surprising.

New partnerships, new services

The findings point to some key implications for the first steps that operators will need to monetize 5G. Specifically, to cultivate 5G business services, operators will need to be able to engage with customers, third-party service providers, application developers and device partners across a range of industries. Only then will they be able to collaborate in diverse ways to co-create the services required to meet the needs of different industries.

In fact, a big part of 5G's commercial success will depend on the formation of new partnerships and services in industries outside the mobile industry's tried-and-tested consumer markets. For these partnerships and services to succeed, mobile operators must invest in and put in place the technologies and processes to monetize these services, and they must ensure that every contributor and external partner in the value chain gets their fair share of revenue.

This collaboration is imperative if operators are to properly monetize 5G and maximize their return on investment in it. However, these new ecosystems also present new challenges for operators. Here's a look at two of them, and two solutions for them informed by our study findings.

Quick and versatile 5G ecosystems

The advantages to having a 5G ecosystem of many players include enabling scale, encouraging innovation and supporting specialization. Mobile operators, however, are generally bound to their home country, and even the bigger players in a domestic market don't have the capacity to create and then manage ecosystems on a global scale.

But, when asked about the challenges of developing and running ecosystems, respondents in the Heavy Reading operator survey identified coordinating multiple partners as a primary challenge (74 percent).

One answer to this challenge lies in the use of an online marketplace where providers of devices, subsystems and services can all offer their products to third parties seeking to create 5G offerings for businesses.

A marketplace approach lets developers and service providers reach customers at lower cost and with shorter lead time. It offers operators and third-party partners an easy and flexible way to create 5G services for business customers. They can pick and choose the components and functionality that they need to create a service or solution from specialist suppliers.

For operators, in particular, an online marketplace platform offers these capabilities:

1. **Sourcing of service components from the marketplace** – An operator, for example, that wants to expand in the oil and gas sector could source specialized, preapproved sensor devices, or an operator seeking to scale up an IoT service internationally could source an industrial device with embedded roaming connectivity.

2. **Offering of connectivity services to other providers** – A vending machine company, smart meter company or automotive company, for example, could purchase national 5G connectivity for their devices to include in the sale to a customer.

In these ways, online marketplaces offer a powerful option to open the addressable business market for operators. They can also radically lower the costs of creating industry-specific and customer-specific 5G business services.

New technology for 5G clearing and settlement: blockchain

Monetization among partners was one of the main challenges cited by operators in the survey when asked about 5G services. On that point, 83 percent of respondents identified the security and immutability of charging and billing as their principal challenge when collaborating with others on 5G services.

To monetize a 5G ecosystem, each partner involved in delivering a service will need to be able to accurately charge for its contribution toward that service in a way that's quick and low-cost, but also accurate and secure.

One solution that has emerged to meet these requirements is blockchain. In a blockchain process, a growing list of records, called "blocks," are recorded, and the data is instantly and automatically duplicated onto all other connected computers on the blockchain. Because records can only be added using rules agreed to among the participants, they can't be circumvented by individual actors, and the data becomes part of a reliable, unbreakable "chain" of trust.

In this way, blockchain has the potential to provide a new global network of secure distributed databases, and "smart contracts" that allow monetization of any transaction and independent, third-party validation of charges. And this capability makes it ideally suited to undergird new 5G marketplaces.

In fact, operators have already begun integrating blockchain for roaming service settlement and reported significant improvements in the time it takes to settle accounts at month-end, greater confidence in the accuracy of accounts, and, consequently, fewer disputes. The next stage is to extend blockchain to the universal clearing and settlement of multiple technologies – from LTE and 5G to Wi-Fi and multiple IoT connectivity options – among multiple partners both in and outside of the operator space.

New era of 5G services

While this year marked a major one for 5G, its rollout continues to accelerate. It will continue to play a bigger and bigger role in our future, where more and more facets of the world will be integrated with and powered by mobile. To realize this future, operators will need to cultivate new 5G business services with customers, third-party service providers, application developers and device partners across a range of industries. Our findings show that these steps are crucial if operators are to properly monetize 5G and maximize their return on investment in it.

Michael O'Brien

Group Vice President, Corporate Development and Strategy

Michael O'Brien is responsible for driving Syniverse's global strategic planning, developing new avenues for revenue growth, ensuring synergy across different business organizations, and identifying and managing partnerships. Previously, Mr. O'Brien served as Senior Vice President and General Manager of Risk Management and led Syniverse's global fraud prevention and revenue assurance services, helping service providers control risks related to fraud and security, accurately capture revenues, and prevent revenue leaks. Prior to that, he was Senior Vice President of Business Development and oversaw Syniverse's acquisitions, new customer relationships and industry relationships. Earlier, Mr. O'Brien was Vice President of Marketing, and, before that, served in a number of other senior-level positions in the company. He holds a bachelor's degree in computer science from the University of Virginia.

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Wholesale Industry in the Digital Age –

Challenges and Opportunities Emerging from Data Hungry Products and Services

As operators prepare themselves for the next decade, it becomes apparent that the telecom landscape is changing rapidly. Telecom operators diversify their investments, and venture into new services & products. They take on projects, that were previously considered not to be their domain – they provide cable television, digital marketing, banking services and many, many more. One can even remember AT&T's journey into the movie and TV industry. They have acquired Time Warner, and from this, one can even say they are now in the graphic novel business. Yes, the recent DC Comics movies were done by a company owned by the USA's largest mobile operator.

The new trend is to be able to adapt new products and new consumer groups in new regions through daring efforts. The one who is able to implement new products & new strategy will eventually adapt to new industry standards better than the ones that stayed true to their modus operandi.

MNO's products & services must now reflect increase capacities of new generations of smartphones. The capabilities that previously belonged to PCs are now open to smartphones. With large screens and capable processors, average smartphones can process complex tasks, use geolocation, natural language processing and many more. Now everyone can use a web service or a mobile application to order a good or service online, see the location of any business & navigate to it, socialize, and stream audio and video content. For mobile service providers it's 'survival of the fittest 2020.' They have a need to constantly explore and accept new trends&demands.

One of the most prominent new trends is the use of RCS, or Rich Communications Services. This technology has already been implemented by 81 operators worldwide. It essentially provides mobile application capabilities through a native messaging app. Through an RCS-enabled phone, a user can maintain "All-in-one" channel-to-user without the complexities of multiple channels for different functions & demands. Ordering a delivery of goods & services, asking questions, maintaining routine operations like re-ordering, providing feedback – all this can be implemented through one particular channel, native to most smartphones.

In many ways these changes were enabled by increased mobile data speed. All these services are dependent on 3G and 4G connectivity to be comfortable to use. The introduction of 5G will further enable this trend. For example, 5G connectivity will bring streaming live video to a new level of quality. At a recent IBC show in Amsterdam there was a platform that allowed the synchronization of multiple live video sources, sound streams & external commenting. The video cameras used were of high end smartphones. Basically, this platform substituted expensive and bulky TV news equipment with smartphones. Instead of using specially standardized cameras, they used Android devices. Instead of a TV News van collecting data and sending it to the broadcaster, a 4G network was being used to seamlessly transfer live video feeds. This means smaller companies that couldn't afford to enter into the TV channels' domain because of equipment cost will be able to do so now. This means news delivered way faster, from more angles & points of view.

All these changes lead operators into becoming more agile, willing to take risks & invest in new functions. For many years it was common for average employees to re-invent themselves every few years to be all- around professionals. People learned & mastered new skills & knowledge to grow within an organization, to become more valuable and to serve more functions. For the telecom industry the same concept is now true on a company level. A company can no longer stay within "bread and butter" services like Voice and SMS. The mobile operator must enter into and enhance digital marketing, web-based services, application development, geolocation, and other services that add value.

I am proud to say that Lanck Telecom is a long term adept of this strategy. Every year we introduce new products & services to clients – be it RCS connectivity, our Fraud Management System, digital marketing or other new services.

Of course, the road to change is never easy. Many operators face difficulties maintaining existing networks & enhancing capacity. Then there is always a "leap of faith" challenge - when a company ventures into a new market where the operator will not feel comfortable adding new products. Decreasing Voice traffic volumes may mean smaller budgets for new projects.Despite all these challenges, mobile operators are still in a great position nowadays. They maintain a very large share in digital life. They provide connectivity needed for all these services, and maintain global reach directly to users' smartphones. So instead of just accepting a new world and following the trends done by other businesses, MNOs have the opportunity to lead the change by providing new services directly to consumers and defining the future of the mobile world.

Igor Skutsenya combines 6 years' experience in telecom industry. He has been involved in financial, international projects, management and business development sectors. In LANCK Telecom Igor works as RCS team leader, Fraud Management System assistant project manager.

Creating a Global HUB

Omantel has grown from a regional wholesale provider to a global player

Cloud, content and real-time communications are driving the need for telecom hubs that can support global transformation while connecting and optimising applications and services with optimised latency networking, says Sohail Qadir, Vice President, Wholesale at Omantel.

Oman is located at the tip of the Arabian Peninsula, at the nexus between Asia, Africa, Europe and the Middle East. It has been a centre for international trade for centuries, and recently it has emerged as a leading global hub for telecom.

Oman's unique geographic location is enabling Omantel to offer an optimised network latency between Frankfurt and Singapore, as well as many key destinations across the globe. This is a competitive advantage that benefits our customers but it is not the only reason Omantel has been positioned as a leading global telecom enterprise .

While planning and implementing our award-winning Global Wholesale Integration Project, we have taken the geographic advantage of Oman and combined it with strategic investments to offer customers a comprehensive set of solutions that support digital transformation. It is not just about our location. We have taken deliberate steps to develop infrastructure, solutions and processes that benefit local businesses and customers in Oman and around the world.

Going Global

What is a global hub? For us, it is simply a place that combines diverse connectivity options to multiple destinations with data centre infrastructure and a safe, open and friendly business environment that encourages and facilitates growth.

Omantel has been investing in subsea cable infrastructure for more than two decades. Today, we have investments in more than 20 subsea cable systems globally and direct connectivity to more than 50 countries and 120 cities.

Our projects have included launching the Gulf to Africa (G2A) subsea cable system between Oman, Somalia and Ethiopia. G2A provides direct access to east Africa and supports the development of the digital economies of these fast-growing economies. This has come after our investments in the Asia Africa Europe (AAE-1) cable system that spans the globe.

AAE-1 uniquely connects Asia, Africa and Europe via Oman and offers new and diverse terrestrial networks that avoid some common bottlenecks. It covers countries that comprise almost 50% of the world's population, spanning approximately 25,000 km with a design capacity of up to 40 Tbps built on the latest 100Gbps technology. AAE-1 provides point-to-point connectivity between customer endpoints and provides high capacity requirements in response to customers' growing data, internet, cloud and video traffic demands.

Omantel is the only provider on the AAE-1 cable system to have two landings, one in Oman and the other in France. To further serve the needs of our customers, we launched Omantel France and offer a Europe-wide network footprint. This made Omantel the first and only GCC telecom operator to have a subsea cable landing in Europe.

Optimising Performance

In Oman, we have partnered with Equinix to develop a world-class data centre infrastructure in Muscat and provide a secure and reliable place to host applications and service providers. The Equinix Muscat 1 data centre offers customers a carrier-neutral facility with direct access to subsea cable infrastructure, which is a unique concept in the region.

The final piece of the puzzle is ensuring that we can offer optimised performance across our global footprint. To do this, we developed an International Network Operations Centre (INOC). INOC was developed in response to customer demand and has been specifically tailored to the needs of the cloud and content-centric market. It monitors our international services via either terrestrial or subsea cable systems to ensure smooth network operations.

It has been purpose-built to resolve all network-related issues rapidly and in compliance with stipulated policies, procedures, and quality standards. INOC aims to ensure up to 100% uptime of the network, and delivers operational service excellence ensuring high levels of customer experience.

Reach Further

When delivered as a seamless solution that combines all of these elements, transformation can be accelerated and growth can be achieved in new markets. Our wholesale clients can connect and optimise their applications and services in a trusted hub that offers them direct access to and growing markets. This enables them to deliver consistent end-user experiences that meet and even exceed the expectations of their customers.

Utilizing Omantel as their global hub, our wholesale clients can serve millions of potential users and capture more opportunities with increased agility.

Our customers have a need for global access and performance. We are not just connecting our customers. We are enabling them to reach further.

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How Does Facial Recognition Technology Work? – **5 Real World Use Cases**

How does facial recognition technology work, and how is it used today? We provide five real-world examples and list the pros and cons of these systems.

By Bill Mann, August 19, 2019

Facial Recognition systems are becoming ever more common. From airports to the streets of big cities to individual shops and apartment buildings, this tech is being applied everywhere. At the same time, there are functional and privacy concerns with these kinds of biometric identification systems.

What is facial recognition technology like today?

In this article, we will look at the state of Facial Recognition technology today. We'll cover the basics of the technology first, then look at some of the systems that are in use today. While things are moving fast in the field of Facial Recognition, by the end of the article, you should have a good sense of where things stand today, both the promise and the peril.

Facial Recognition Technology Basics

Before we get into the current uses, let's go over how this incredible technology works.

How Does a Machine Recognize a Face?

While us humans recognize faces in by instantaneous pattern recognition, machines do it completely differently. Machines recognize and remember faces by taking all sorts of measurements of facial characteristics, then saving the resulting data as a representation of the face.

While there are variations in the tech, the basic process goes something like this:

- The system receives an image to analyze. This could be a still photo like those taken by systems at US airports, or a frame from a video of a person in motion. Some systems use techniques like infrared lidar and thermal imaging sensors to get additional information. Researchers are reportedly even working on systems that use sonar (like a bat or a submarine) to improve accuracy. As a result, the 'image' to be analyzed might actually be a set of images created with different types of sensors.
- The system searches for a face or faces in the image. It looks for characteristics that indicate the presence of a face, such as eyes, ears, nose, mouth, cheekbones. Once it identifies enough of these, the system has 'found' a face.
- The system measures various characteristics of the face. Some characteristics that might be used are the distance between your eyes, the depth of your eye sockets, the shape of your cheekbones, and the distance from your forehead to your chin. Newer systems generally consider many more characteristics than this, including things like skin color and texture. They can also adjust for variable lighting, a face that isn't looking

directly into the camera, and so on.

- The resulting data is stored as a representation of the face.
- The representation of the face is compared to a database of known faces.
- The system identifies the best match amongst the faces in the database and determines whether the match is close enough to be considered a hit. If there is not a match, the data may be stored to be matched with other personally identifiable data later, perhaps at the checkout counter in a store.

As you can imagine, the most advanced facial recognition systems are much more complex than this, but you now have a general idea of how the process works.

Modern Facial Recognition techniques are said to be more accurate than human recognition. However, at least some of the facial recognition systems in use now are pathetically bad at the job.

Maybe they are using older, less accurate technology (it can take years for a system to make it out of the lab and into the world). Or it could be that recognizing faces out in the real world is much harder than in the lab. Perhaps as Dr. WonSook Lee explains in the video, the systems that aren't getting good results aren't trained well enough.

Whatever the reason for the bad results some systems get, there is a huge amount of money and research going into this field, and it is certain that facial recognition systems will keep getting better and better.

A Quick Tour of Facial Recognition Technology in the Real World

One way to get a sense of where things stand is to look at some recent examples of the use of Facial Recognition Technology. In the vignettes that follow, we will look at several real-world applications of facial recognition technology and list their pros and cons.

London's Live Facial Recognition System

Promise: More efficient policing.

Peril: Exposes innocent passers-by to unwanted surveillance. Frequently generated false positives, resulting in an innocent person's face being associated with a criminal's records, at least temporarily. It caused confrontations between police and citizens who didn't want to be scanned.

Until recently, the London Metropolitan Police has been testing its Live Facial Recognition (LFR) on the streets of London, making millions of innocent civilians part of the test without their consent. The system used cameras, facial recognition software, and an AI to compare the faces of passersby with those in a database of people wanted by the police.

Live Facial Recognition – Source: met.police.uk

If the AI detected a match, it would notify a nearby police officer. The officer would evaluate the information received from the LFR system and decide whether or not to approach and interrogate the person. The idea here is that even wanted persons need to go out into the world sometimes, and when they do, LFR could spot them and point the police right to them. This could be much more efficient than tracking down subjects the old-fashioned way.

However, the system has had many problems. One is the invasion of privacy caused by a system that at least momentarily generates and records Biometric data for every person passing in front of its many cameras. According to the LFR website,

"The system will only keep faces matching the watch list, these are kept for 30 days, all others are deleted immediately. We delete all other data on the watch list and the footage we record.

Anyone can refuse to be scanned; it's not an offense or considered 'obstruction' to actively avoid being scanned."

LFR

These guarantees ended up to not be very reassuring for a few reasons. First, the system has a tendency to make false-positive identifications. That is, it confuses innocent people for people whose faces are in its watch list. This results in innocent people being stopped and questioned by the police and having their identity stored in the LFR database for some amount of time.

How inaccurate is the LFR system? Big Brother Watch, a UK privacy group, has a breakdown of the details here. Here's a screen capture

of the highlights from that breakdown:

LFR inaccuracy

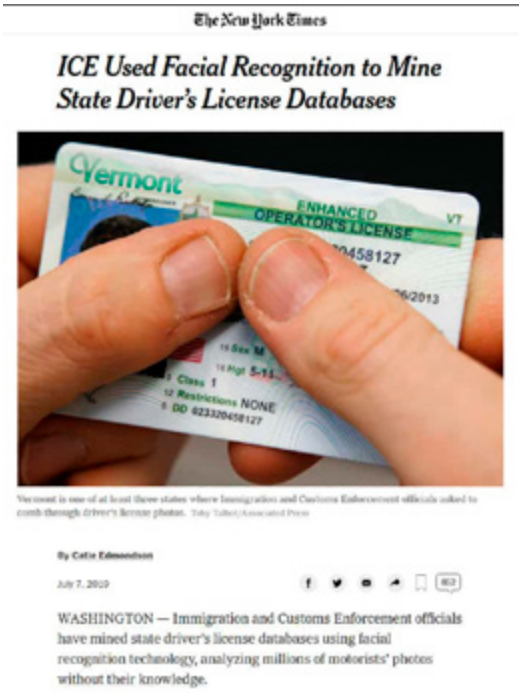
As you can see, it seems the system wrongly identified innocent people the vast majority of the time. What happens in these cases? According to Big Brother Watch, when the system incorrectly identified people, their biometric data was still retained for a year, even though they had done nothing wrong.

Who has access to the biometric data from those innocent people? How is it used? How is it protected from hackers and other forms of misuse? We don't know the answers to these questions.

Given that the system was so incredibly inaccurate, it is good to know that people were allowed to avoid being scanned. Backward from the perspective of privacy rights, but at least a way out. But the reality of the situation was very different.

As detailed in this article from the Mail Online, actively avoiding being scanned led to a passerby being forcibly detained and photographed so his face could be entered into the system. The Mail reported that the police finally confirmed that you could actively avoid being scanned. However, if you did actively avoid being scanned, they could consider that suspicious behavior, detain you, and force you to be scanned anyway.

As of the publication date of this article, the LFR system trials have ended. The police are now evaluating the results of the tests and deciding whether or not to deploy the system.


The New York Times

ICE Used Facial Recognition to Mine State Driver's License Databases

By Catie Edmondson

July 7, 2019

WASHINGTON — Immigration and Customs Enforcement officials have mined state driver's license databases using facial recognition technology, analyzing millions of motorists' photos without their knowledge.

Scanning Driver's License Databases for Illegal Immigrants and Other Criminals

Promise: Rapid federal government detection of criminals using existing state records.

Peril: Possible violation of state's rights. The United States Congress has not explicitly authorized this use of state databases.

ICE, the Immigration and Customs Enforcement agency of the United States, is in the news a lot today. Charged with securing the borders, among other things, ICE is the target of many groups opposed to US immigration policies. And its use of Facial Recognition technology recently made headlines.

ICE Facial Recognition of Drivers License

ICE's use of facial recognition technology to analyze driver's license databases triggered reactions from many groups, including privacy advocates. There are several issues here. One is the conflict between the State's Rights and the Federal Government. The US Congress has not approved this use of state motor vehicle records. However, approximately 20 states have approved the use of their databases by law enforcement agencies for years. This includes the FBI, which is a Federal agency.

Searching for Illegal Aliens

The real problem seems to be the conflict over illegal aliens. Some of the states that give ICE access to their driver's license databases have encouraged illegal aliens to obtain driver's licenses. According to researchers at Georgetown University Law Center, ICE has sometimes targeted illegal aliens when scanning these databases. Whether looking for illegal aliens in these databases is a problem or not depends on where you stand on the immigration issue.

" They also point out that, "This is an established procedure that is consistent with other law-enforcement agencies.

Immigration and Customs Enforcement – Source: Shutterstock.com

When questioned about the legality of these activities by National Public Radio (NPR) ICE stated the agency "will not comment on investigative techniques, tactics or tools." They also point out that, "This is an established procedure that is consistent with other law-enforcement agencies."

Violating the Privacy of All Drivers?

A more general privacy concern is that the FBI, ICE, and other agencies mine these databases for information. Few citizens are aware that getting a driver's license exposes their information to Federal as well as State agencies. It isn't clear which agencies have access to the data, nor what they are doing with it, and what happens to the data after it is "used."

Screening Persons Arriving in the United States from Foreign Countries

Promise: Faster, more efficient passage through US Customs.

Peril: False alarms can disrupt travel. A huge database of Biometric data is a great target for hackers. Data on 10's of thousands of travelers has already been stolen.

Since 2017, U.S. Customs and Border Protection (CBP) has been using Facial Recognition systems at various entry points to the United States. According to Federal Computer Week (FCW), the system has caught multiple imposters trying to cross the border with false documents. The system compares the face of the person currently holding the document to stored biometric data previously associated with that document.

More recently, facial recognition tools are being used to identify people that are entering and leaving the country at multiple airports. And the agency plans to expand its use of the technology greatly.

This comes despite growing public opposition to the use of facial recognition technologies. Civil libertarians and privacy advocates see large future risks from the deployment of these systems.

According to the Electronic Privacy Information Center's United States Visitor and Immigrant Status Indicator Technology (US-VISIT) page,

"At least 30,000 individuals from federal, state, and local governments access the data contained obtained by DHS's biometric collection program. DHS shares this biometric data with foreign governments, including Canada, Australia, and the United Kingdom."

United States Visitor and Immigrant Status Indicator Technology

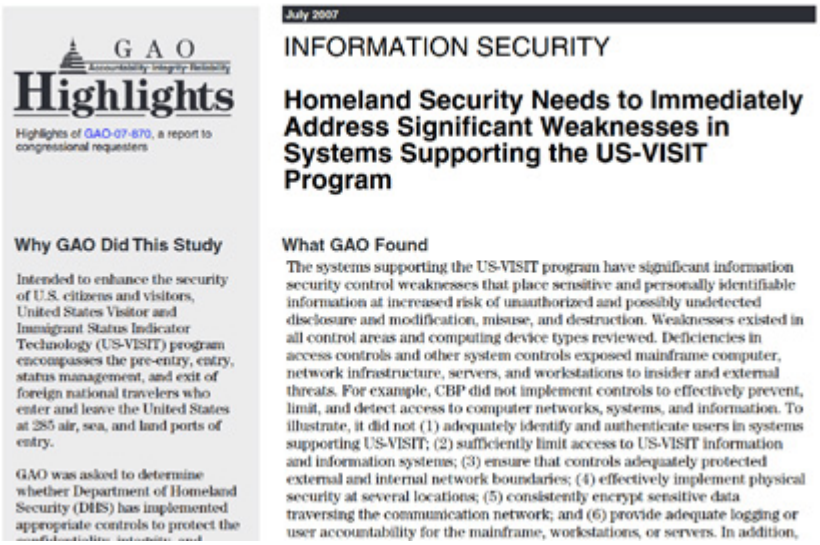
US-VISIT

As with other systems we've looked at, it is unclear who exactly has access to your biometric data, and what they are doing with it.

In addition, there are concerns with the security of the biometric and other personal information gathered by the system. As far back as 2007, the GAO found major problems with the computer systems supporting US-VISIT:

GAO Information Security

Note that in 2013, US-VISIT was renamed the Office of Biometric Identity Management (OBIM). It is unclear to us whether all the problems in the government's computers have been resolved. But even if their systems are 100% secure (no computer system is 100%



GAO

Highlights

Highlights of GAO-07-870, a report to congressional requesters

July 2007

INFORMATION SECURITY

Homeland Security Needs to Immediately Address Significant Weaknesses in Systems Supporting the US-VISIT Program

Why GAO Did This Study

Intended to enhance the security of U.S. citizens and visitors, United States Visitor and Immigrant Status Indicator Technology (US-VISIT) program encompasses the pre-entry, entry, status management, and exit of foreign national travelers who enter and leave the United States at 285 air, sea, and land ports of entry.

GAO was asked to determine whether Department of Homeland Security (DHS) has implemented appropriate controls to protect the

What GAO Found

The systems supporting the US-VISIT program have significant information security control weaknesses that place sensitive and personally identifiable information at increased risk of unauthorized and possibly undetected disclosure and modification, misuse, and destruction. Weaknesses existed in all control areas and computing device types reviewed. Deficiencies in access controls and other system controls exposed mainframe computer, network infrastructure, servers, and workstations to insider and external threats. For example, CBP did not implement controls to effectively prevent, limit, and detect access to computer networks, systems, and information. To illustrate, it did not (1) adequately identify and authenticate users in systems supporting US-VISIT; (2) sufficiently limit access to US-VISIT information and information systems; (3) ensure that controls adequately protected external and internal network boundaries; (4) effectively implement physical security at several locations; (5) consistently encrypt sensitive data traversing the communication network; and (6) provide adequate logging or user accountability for the mainframe, workstations, or servers. In addition,

secure), there are other players involved here.

One website reported that biometric data on tens of thousands of travelers was stolen in a data breach. In May of 2019, CBP learned that a subcontractor had transferred data (license plates and traveler images) to their own computers. This kind of transfer is forbidden by CBP rules but was apparently done in defiance of those rules.

That data was then stolen from the subcontractor. According to comments from CBP, data for less than 100,000 travelers was stolen. While CBP would not disclose the name of the subcontractor at fault, sources say that shortly after the hack, The Register discovered a site on the dark web containing hundreds of gigabytes of license plate images and other data, available for free to anyone who wants it.

Social Media Sites Applying Facial Recognition to User's Photos

Promise: Automated tagging of users in photos.

Peril: Users claim Facebook recorded biometric data without their consent and sued. It creates a huge database of biometric data for hackers to target. Google, Apple, Microsoft, and others are doing the same. It is unclear what is done with the data and who else has access to it.

The things social media sites can do these days are incredible. One of their cool tricks is automatically tagging people in the photos you post. As you are probably aware, they apply Facial Recognition technology to get this done.

Social Media Sites Applying Facial Recognition – Source: Shutterstock.com

But not everyone is thrilled with this particular capability. As a result, a group of Facebook users launched a class-action lawsuit challenging Facebook's use of their biometric data. Earlier this month, the U.S. Court of Appeals for the 9th Circuit in San Francisco ruled 3-0 that the case can proceed despite Facebook's attempt to block it.

The case was started by three Facebook users from Illinois, where state law prohibits companies from collecting and storing biometric data without the user's written consent.

Judge Sandra Ikuta wrote that "... the development of a face template using facial-recognition technology without consent (as alleged in this case) invades an individual's private affairs."

While it will probably be years before this case is closed, the results could help clarify what rights users have to their own biometric data.

Tailoring Billboard Ads Based on Facial Analysis

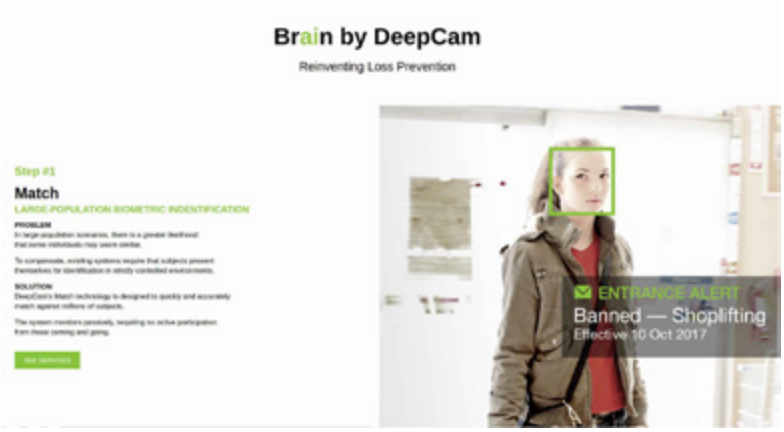
Promise: Ads that are targeted to the viewer's age, gender, and mood will be more effective.

Peril: Once this tech is widely deployed, it is a small step to full facial recognition and private surveillance of your activities.

Using a system created by the French company Quividi in 2015, some shoppers at upscale malls seem to be living in a science fiction movie. When they visit one of more than 40 Westfield shopping centers, they are surrounded by hundreds of smart billboards that tailor advertisements to be most effective on them individually.

The billboards have cameras feeding a Facial Analysis (not Facial Recognition) system that can identify characteristics like your age, gender, and mood. The company stresses that the system does not do Facial Recognition, meaning it doesn't know that it is you, Jane Doe, from Perth looking at the billboard. The cameras instead record blurry images that are sufficient for the required analysis but not for Facial Recognition.

The system can determine characteristics such as the person looking at this particular billboard is likely:



Brain by DeepCam

- Female
- Age 30 to 35
- Is very happy right now

Given this information, the system displays ads that are tailored to appeal to a person with these characteristics. That's a little bit creepy. Even more creepy is that the system records the person's reactions to the ads and sends the data to the relevant advertisers. This lets them tweak their ads to be even more effective at separating each shopper from their money.

According to this article in the Guardian, the system's accuracy ranges from around 90% for gender to about 80% for mood.

The privacy concern here is that next step from facial analysis to analysis plus recognition. Few of us are likely to want stores recording where we are, what we buy, what mood we are in, how we react to specific ads, and who knows what else a combined system could learn about us.

According to the article, other stores are further along the facial recognition path than Westfield. They say that chains like 7-Eleven, Target, and Walmart are all experimenting with using facial recognition tech in their stores. In 2018, a company called FaceFirst launched a system called FraudIQ, which uses facial recognition technology to scan for known shoplifters and people abusing store return policies.

Another system is called Brain by DeepCam. This system uses facial recognition to spot people who have been added to the store's database of problem visitors to identify those who need to be intercepted by security.

Brain by DeepCam

Both FaceFirst and DeepCam market their services to US retailers. While it is unclear which companies will supply the systems, and how soon your every move will be monitored, at some point it's likely there will be by AIs connected to facial recognition systems in stores.

In 2018, the American Civil Liberties Union (ACLU) questioned 19 of the top American retailers, plus Disney, about their use of facial recognition technology. Only one of the companies (Lowes) said it did use the technology, and only one (Ahold Delhaize, which owns several supermarket chains) said it did not use facial recognition technology.

The other 18 refused to confirm or deny the use of facial recognition technology. Maybe we are paranoid, but these non-answers seem to imply that the companies either are now or will soon be using the technology.

Now What?

As we've seen, facial recognition systems are real, and they are deployed in the world. This is true despite their imperfections and the real privacy threats they embody.

One particular concern that I don't believe has been getting enough attention is what happens when (not if, when) some database containing your facial characteristics or other biometric data gets hacked. This is your face we're talking about, not some 8-character password. If biometric data gets stolen, you are in deep trouble. What are you going to do, get surgery to change the shape of your face?

Now What?

Facial Recognition systems are here, and they aren't going away. They are instead spreading with little or no control. If these systems are going to be practical, hopefully there will be some serious discussions of topics like when and where is it appropriate to use this technology. And as a result, strict rules on who controls your biometric data, how it can be used, and how it can be stored safely.

Source: https://blokt.com/guides/facial-recognition

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WOMEN IN TECH

On the occasion of our new initiative "Women in Tech", we asked to Huda al Habsi from Omantel to share her perspective with us.

How diverse workplaces could lead to higher productivity, greater innovation and higher achievement?

In this era of economic globalization, many companies are making efforts to achieve workforce diversity, which aims to employ workers from different backgrounds, regardless of race, gender, religion and culture. When companies recruit and retain a diverse pool of people, it brings about different benefits to the company as well as its employees.

A diverse workforce is a more productive workforce, and your business can benefit from different perspectives, improved community relations and more creative ideas.

Workforce diversity can bring about an increase in productivity and competitive advantages. Employers can offer more solutions to customers because of new ideas and processes brought into the organization. Workplace diversity also increases employee morale and causes employees to desire to work more effectively and efficiently. Workforce diversity increases creativity within a company because employees from different backgrounds bring in a variety of solutions on how to achieve a common goal. As more diverse ideas are suggested, the chances of finding a workable answer are improved.

More ideas are formed because team members are culturally diverse. For example, employees from China working in American companies may approach a problem totally differently than do American-born workers.

Companies that plan to expand into global markets benefit from language diversity in the workplace. For example, a company with employees fluent in Japanese and who understand Japanese culture experiences an easier time communicating with representatives from Japan. Many bilingual workers experience an advantage when applying for jobs because employees understand the benefits of language diversity.

Furthermore, Job seekers are drawn to companies with diverse workforces because it is evident that the companies do not practice employment discrimination. Potential employees want to know that employers treat their staff fairly regardless of race, ethnicity or gender. Not only are such firms able to attract new talent but they can also retain existing talent because of high employee morale resulting from workforce diversity.

Which Corporate strategies and structures to implement to ensure better integration?

Make a long-term investment.

If you only focus on diverse hiring for a short period of time, you can't expect to see results immediately. Companies have to create a multi-year plan with publicly-stated goals in order to demonstrate their commitment to diversity and hold themselves accountable to their stated objectives. One of the company's goals should be to increase the proportion of women in leadership, promote gender equality and women empowerment.

Eliminate bias in the hiring process.

Companies' hiring and interview processes should not pose an additional hurdle. Too often, though, they do. Implicit bias is often embedded in job descriptions, interview questions, interviewer attitudes and more.

Avoiding Pay or Compensation Discrimination and implement an

HR manual that includes employee rights and disciplinary actions for workforce un-fairness and discrimination.

What are the Key challenges women facing in the telco industry and which company programmes are being introduced to tackle them?

I have been so lucky to grow up in a society that has been established in a way that everybody can work. The Government of Oman has been empowering women in all fields and jobs are not restricted to men only. I believe work-life balance is the number one challenge for women in the workforce. In some cases in other societies, women are forced to stop working all together when they have a family. To progress in their careers, Woman have to be supported by their husbands / families.

Despite progress in employment gender equality, men continue to substantially outnumber women in terms of employment in the Teleco industry. Many analysts attribute the gender disparity in technical fields to the fact that women study science, technology, engineering and mathematics at a lower rate than men do. Some experts suggest that cultural expectations also influence the gender divide causing women to feel pressured to pursue careers in other industries.
Women often feel like societal pressure and cultural norms work against them while seeking employment and advancement in tech careers. The following three challenges still exist in many settings, but women in Telcos can overcome them as they pursue a fulfilling and successful career.

Inequality & discrimination

Forbes 2016 Statistics indicate that women working in Tech positions report gender inequality at a higher rate than the overall average among employed women. Networking opportunities and promotions go to men in tech careers at a higher rate than to women. Employees in the work environment often question whether a woman has the ability to address and resolve technical issues.
Gender discrimination, though illegal, still exists in the job market. Interviewers often ask questions about marital and parental status to female applicants.
Women who experience discrimination and inequality in the workplace should talk about the issue openly and report it to their supervisor. The company's responsibility will, then, be to address the issue properly. To prevent such situations from occurring again, business owners need to educate their personnel about gender discrimination and teach them how to recognize and deal with it.
Moreover, business owners and managers who have a healthy attitude toward women in the workplace should set an example for the entire company by behaving in ways that respect all workers and treat everyone working in IT fairly, regardless of gender. Such behavior will also respectfully treat all employees that become mothers and make them feel comfortable and secure while taking leave. Similarly, employers need to adopt flexible scheduling so working mothers don't feel as though they must neglect their responsibilities to keep their job.

Not Fitting In

Women in male-dominated fields such as IT often lack self-confidence and suffer from feelings of inferiority. In a workplace where the great majority of employees are male, women often feel as they don't fit in. Some women due to family obligations can also experience difficulty staying up-to-date with the latest trends in technology, leading to a skill gap that adds to the challenges they face. Still, women can do IT jobs just as well as men can, as long as they make an effort to develop and maintain their proficiency in required skills.
Women can overcome the obstacles they face while working in IT by letting their performance speak for them.

Lack of Support and Understanding

Female Tech employees often report feeling as though they don't have the full support of their coworkers. They also feel a lack of support at home in cases where their family members and friends still embrace cultural biases regarding women in the workforce. Attitudes about the role of women at home often prevent female tech workers from achieving a healthy work-life balance. Also, new mothers often cut short their paid maternity leave because they feel as though they will lose their job or promotion because of their absence.
Companies need to recognize and admit to the problem of gender inequality in their IT workforce. They need to diligently transform their corporate culture into one that respects all employees, regardless of gender.
Women can overcome gender-based challenges in IT right now by focusing on their skills and staying current with industry trends.

During the course of my career I have worked in a male-dominated atmosphere and I just haven't let it be part of my thinking that there wasn't a role or job I couldn't get. A positive attitude and professionalism, along with a lot of hard work, have helped me overcome any struggles I have faced in these environments. I don't think it's a case of overcoming masculinity, I think it's learning how to live in harmony in the workplace.
I believe women need successful women leaders as role models to inspire other women to achieve and prosper. Identifying female role models is critical in inspiring young women to pursue a career in technology or any other area.
I have worked for a lot of very intelligent men, and believe you need to learn from both men and women – that balance is important. Being a manager, it's not all about gender, it's about wanting to be the best manager you can be and the necessary skills required to take your team to the next level. I challenge myself every single day to become better. It wasn't always easy, but life isn't about easy, it's about growing and challenging yourself. I loved being constantly challenged to become the best version of myself.
Don't be afraid of taking a step

down on the career ladder, because you can always go up and learn something new on the way, and always challenge yourself. The goal is to evolve – I want to keep growing and learning to make sure I'm achieving the best I can for my team. I admit I've jumped a couple of times through my career when I didn't know what I was jumping into.
I have been fortunate enough not to feel too much negative influence through being female in my career and I'm lucky enough to be working in an environment where I can really say that excess masculinity in the workplace is not an issue for me.

If a woman wants a particular job in a certain field, she needs to know how to position herself to do so, and often it means liaising with the right mentors and having the right conversations – it will not be handed to you, you need to ask for it. Last but not least, a positive attitude, hard work and professionalism are the keys to success.

How to retain women in the telco industry?

Women have much to contribute to the workplace, and HR and talent management professionals should take steps to ensure their workplaces attract, retain, and develop them and that key leaders understand that doing so is a strategic priority. Below are some ways leaders can do this:

Offer flexibility

Offering flexibility is essential in today's workplace, and not just for women. Flexibility can be offered at the micro level—allowing employees to work core hours (between 10:00 a.m. and 4:00 p.m., for example), with remote and flexible hours beyond that. It can also be offered by the day, week, or month.

Offer family-friendly benefits

Working Mother's should be offered paid maternity leaves. In some countries, paid paternity leaves is one of the most effective ways to demonstrate a commitment to women and working families. While paternity leave is designed for men, it ultimately benefits working mothers and children. Implementing paternity leave shows that an employer is willing to go above and beyond to promote equality and inclusion.

Develop an organizational culture that makes work-life balance not only an expectation, but a reality.

It is not enough to have the policies in place to encourage flexibility and work-life balance. They mean nothing if the company's culture stigmatizes those who take advantage of them. In many workplaces there is a real disconnect in the policies and practices as articulated in the employee handbook and in what employees actually experience. One way to address the gap is manager training.

Actively develop women as leaders.

Creating ongoing opportunities to develop women leaders throughout their career cycle. From emerging leaders to senior-level management, consider learning programs for all experience levels in your organization. A strategy has to be in place for developing women in leadership roles. Adopting and implementing leadership training will make your organization competitive.

Just like men, women are motivated by higher compensation and the tangibility of being promoted.

HUDA AL HABSI

Senior Advisor Technology at OMANTEL

Huda is Senior Technology Advisor at OMANTEL. She brings more than 15 years of experience in both IT and Marketing in the telecom industry.

My experience was gained with a key focus on building and maintaining highly successful business relationships as well as contributing as a vital and dynamic team player.

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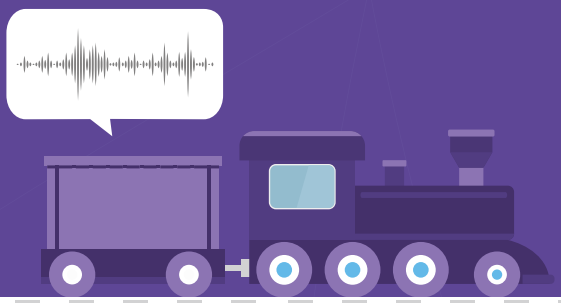

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Google is investing $3.3B to build clean data centers in Europe

Google announced at the end of September that it was investing €3 billion (approximately US$3.3 billion) to expand its data center presence in Europe. What's more, the company pledged the data centers would be environmentally friendly.

This new investment is in addition to the $7 billion the company has invested since 2007 in the EU, but this announcement was focused on Google's commitment to building data centers running on clean energy as much as the data centers themselves.

In a blog post announcing the new investment, CEO Sundar Pichai made it clear that the company was focusing on running these data centers on carbon-free fuels, pointing out that he was in Finland today to discuss with prime minister Antti Rinne building sustainable economic development in conjunction with a carbon-free future.

Of the €3 billion the company plans to spend, it will invest €600 million to expand its presence in Hamina, Finland, which he wrote "serves as a model of sustainability and energy efficiency for all of our data centers." Further, the company already announced 18 new renewable energy deals, which encompass a total of 1,600-megawatts in the U.S., South America and Europe.

In the blog post, Pichai outlined how the new data center projects in Europe would include some of these previously announced projects:

Today I'm announcing that nearly half of the megawatts produced will be here in Europe, through the launch of 10 renewable energy projects. These agreements will spur the construction of more than 1 billion euros in new energy infrastructure in the EU, ranging from a new offshore wind project in Belgium, to five solar energy projects in Denmark, and two wind energy projects in Sweden. In Finland, we are committing to two new wind energy projects that will more than double our renewable energy capacity in the country, and ensure we continue to match almost all of the electricity consumption at our Finnish data center with local carbon-free sources, even as we grow our operations.

The company is also helping by investing in new skills training, so people can have the tools to be able to handle the new types of jobs these data centers and other high-tech jobs will require. The company claims it has previously trained 5 million people in Europe for free in crucial digital skills, and recently opened a Google skills hub in Helsinki:

If infrastructure is the backbone of a strong digital economy, people are at its heart. The second way we can help Europe harness its opportunities is through investments to reskill the workforce for the new digital economy.

The Nordics have already shown strong leadership. For example, Finland is educating 1 percent of its population on artificial intelligence. But AI is only one area where more education is needed—in the next 10 to 15 years, 90 percent of all jobs will require some level of digital skills. That's why we launched Grow with Google, a global effort to provide free trainings designed to help people find a job, advance their career or grow their business. In Europe, we've already trained more than 5 million people in digital skills, both online and in physical classrooms. A couple weeks ago, we opened a Grow with Google skills hub, called a Digital Garage, in Helsinki. Today, I'll have the chance to meet with several students who have already attended courses there. I look forward to discussing the challenges facing job-seekers today and the importance of digital skills in the fast-changing job market.

To help even more people prepare for future jobs, Google.org, our philanthropy arm, is making a grant worth $2 million to Nesta, a foundation focused on innovation. With this grant, Nesta will organize training partnerships with trade unions in Finland, Sweden, Denmark, the Netherlands and Belgium.

At Google, we feel a deep responsibility to ensure that everyone can benefit from the opportunities that technology creates. That applies not just to job training but the development of responsible innovation, as well. For example, last year, we announced a set of AI principles that guide our work and the types of projects we'll pursue.

This isn't a job for one company, or one region, alone. Today, I'll be joining a roundtable with stakeholders from across the Nordic countries, hosted by the Finnish government in our Google skills hub, to discuss how we can work together to advance these priorities. We will also discuss the role of smart regulation and global frameworks to guide the development of AI and other emerging technologies.

We look forward to partnering with governments and other stakeholders in the months and years ahead. Together, we can make sure every European benefits from a strong and sustainable digital economy

It's obviously not a coincidence that the company is making an announcement related to clean energy on Global Climate Strike Day, a day when people from around the world are walking out of schools and off their jobs to encourage world leaders and businesses to take action on the climate crisis. Google is attempting to answer the call with these announcements.

Sources: https://www.blog.google/around-the-globe/google-europe/unleashing-digital-opportunities-europe/

Source: https://techcrunch.com/2019/09/20/google-is-investing-3-3b-to-build-clean-data-centers-in-europe/

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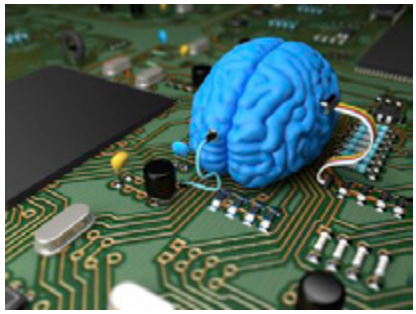
The adaptive data center will become essential to a sustainable planet

Andrew Schaap is the CEO of Aligned Energy

Concerns about rising average temperatures and sustainability have grown beyond scientists and society at large to become top-of-mind among the largest global businesses, many of whom continue to pursue their own environmental initiatives with respect to energy management, water stewardship, and climate protection. The CDP, formerly the Carbon Disclosure Project, has built the most comprehensive collection of self-reported environmental data available in the world, which enables companies, cities, states and regions to measure their environmental impact, manage risk and identify opportunities. Last year,

the CDP queried organizations to calculate how a warming planet might affect them financially.

As reported in The New York Times, after analyzing submissions from hundreds of the world's largest corporations, the CDP determined that some companies could potentially face as much as $1 trillion in costs in the coming decades unless they implemented measures to prepare for climate change. Moreover, by the companies' own estimates, the majority of these financial liabilities could start to materialize in the next five years. Businesses across a number of industry sectors have also expressed worries that extreme weather events could disrupt their supply chains, which for large cloud, content and platform providers could become a challenge when looking to expand into existing or new markets. Among hyperscalers, Google's parent company, Alphabet, Inc., has acknowledged that rising temperatures could increase the cost of cooling of its data centers, which two years ago began running on 100 percent renewable electricity. All of Apple's data centers have been powered by 100 percent renewable energy since 2014. And both Amazon Web Services and Microsoft reached or exceeded 50 percent renewable energy for its global infrastructure in 2018, and have made long-term commitments to ultimately achieve 100 percent.



Given the digital transformation of business and the increasing proliferation of next-generation technologies such as Artificial Intelligence, Machine Learning, and smart city applications, it's unrealistic for us to expect to reduce the amount of data these technologies will generate, or our increasing dependence on them as humanity embarks upon the Fourth Industrial Revolution. IDC predicts that the world's data will surge 61 percent from 33 zettabytes (ZB) last year to a 175 ZB by 2025. And in two years, Cisco forecasts, hyperscale data centers will account for 55 percent of all data center traffic, 65 percent of data stored in data centers, and 69 percent of all data center processing power. As we know, it takes a tremendous amount of energy and often copious amounts of water to power and cool any data center. In fact, data centers contribute to industry's consumption of 45 percent of all available clean water, which is especially a problem in developed countries. Faced with these challenges, hyperscalers, cloud and software as a service (SaaS) providers would likely benefit from an adaptive and intelligent data center platform. Such an adaptive data center is focused on helping companies achieve greater business value with less costly energy, water usage, and infrastructure resources, especially in high density, high performance computing environments. An essential element of an adaptive data center is cooling technology that delivers energy efficiency at any load, in any climate, and regardless of location to support firms' sustainability goals. In addition to reducing resource usage, this mitigates environmental impact and lowers the Total Cost of Ownership (TCO). Once again, as our homes, buildings, workplaces, streets, cars and communities become ever more interconnected, we cannot reduce the amount of data the wondrous technologies driving the Fourth Industrial Revolution will generate. However, we can develop data center infrastructure that is equally responsible to the needs of humanity and those of our planet.

Source: https://www.datacenterdynamics.com/opinions/adaptive-data-center-will-become-essential-sustainable-planet/

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STC wins Best Middle Eastern Wholesale Carrier award in the prestigious Capacity Europe 2019 conference

STC represented by Wholesale Business Unit won the "Best Middle Eastern Wholesale Carrier" award 2019. The winners of the 2019 Global Carrier Awards announced on October 30, 2019, in London at the "Capacity Europe 2019" conference, attended by 2500+, 650+ global ICT companies and 90+ countries. The ceremony for the 15th annual Global Carrier Awards attended by 400 top executives of the wider wholesale community celebrating the industry's biggest achievements over the last 12 months.

The Capacity Europe award is affirmation of STC leading role regionally and recognition as a key global player. STC is at the forefront of digital transformation wave, where Wholesale provides products nationally, regionally and globally through its extensive national and international infrastructure, interconnecting customers to next generation services and content. STC's strategic position in the region linking all neighboring countries with one another and with the rest of the world efficiently and reliably enabled through its data centers, terrestrial and global optical fiber networks which are considered the largest and most modern in the region.

With its headquarter in Riyadh, Saudi Telecom Group is the largest in the Middle East and North Africa based on market cap. STC's revenue for 2017 amounted to 50,747 million SAR (13,533 million US dollars) and the net profit for 2017 amounted to 10,133 million SAR (2,702 million US dollars). STC was established in 1998 and currently counts about 100 million customers worldwide. It focuses on providing services to customers through a fiber-optic network that spans 158,000 kilometers across Asia, the Middle East and Europe. In Saudi Arabia (the group's main operation site) STC operates the largest modern mobile network in the Middle East as it covers more than 99% of the country's populated areas in addition to providing 4G mobile broadband to about 85% of the population across the Kingdom of Saudi Arabia. Besides its main operation in Saudi Arabia, STC's investments include 100% ownership in Viva Bahrain, 51.8% stake in Viva Kuwait, 35% stake in Oger Telecom Limited in UAE which controls Turk Telecom, Avea in Turkey, Cell-C in South Africa, 25% stake in Binariang GSM Holding in Malaysia which controls Maxis in Malaysia. In addition to the above-mentioned, STC has a wide range of underlying investments in information technology, content, distribution, contact centers and real estate, all of which support its telecom operations across the Middle East.

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The need for state-of-the-art security with next-generation networks

5G technology is more advanced than its predecessors, but you cannot state the same thing when it comes to security.

Hackers will continue to take advantage of critical vulnerabilities in signalling protocols like Diameter and SS7 to perform criminal actions including tracking subscribers' locations, committing fraud, stealing personal data and executing denial of service attacks. Even during operators' transition from 4G to 5G networks.

Operators must minimise the impact of such attacks on their reputation and at the same time safeguard their bottom lines. But eager signalling security professionals are hard to come by. Advanced security solutions are therefore required, such as big data-driven portals with rich analytics, signalling firewalls, and monitoring capabilities for real-time detection of anomalous activities.

Sparkle

Sparkle is a leading global operator, with direct presence in 33 countries and an unparalleled experience and know-how in a multiplicity of diverse markets. With its IP&Data, Cloud & Data Center, Corporate, Mobile and Voice Platforms, Sparkle actively takes part in the development of worldwide communications, providing a global connectivity solution to Fixed and Mobile Carriers, ISPs, OTTs, Media & Content Players, Application Service Providers and Multinational Corporations.

Sparkle exploited the opportunity to integrate specific security VAS in connectivity services for Mobile Operators who can benefit from next generation security in terms of maintaining customer trust, ensuring regulatory compliance, and delivering time and cost savings.

Sparkle launched the Signalling Protection Suite; by combining Sparkle's innovative connectivity and roaming services, with an intrusion detection system for Telecom operators, it protects operators against revenue loss, enabling them to concentrate on their core business, and provide their customers with a fully secure service.

On top of that, professional services as Vulnerability assessments can be performed. Sparkle's embedded Signalling Firewall, for both SS7 & Diameter, completes the picture with a state-of-the-art platform that enables blocking of suspicious traffic. This way an operator can establish a proper security lifecycle iteration process.

A story

Signalling protocol SS7 saw its birth around the seventies, when we could still speak of a closed trusted ecosystem of limited parties. At that time security was not an issue at all. Things started to change with the rise of the multiple interconnections between operators, with the objective of guaranteeing roaming functionality to its end-users. By 2000 also the CAMEL protocol came in sight (mostly for handling prepaid roaming), and some later IP-related SIGTRAN as well, which is used to encapsulate SS7 over IPX access ports. And not only mobile operators are mutually connected, but also e.g. VAS providers or aggregators in the messaging business.

Diameter, the Signalling protocol

for 4G mobile networks (LTE), was developed as an evolution of the authentication protocol RADIUS. This is not the ideal way of handling mobility either, given that RADIUS bears its origin in fixed telco networks. The upshot is that Diameter can be even more vulnerable than SS7. And let's not forget that Diameter signalling messages are often converted to SS7 in order to enable interworking between different networks standards. Cross-protocol analysis is thus important.

Hackers

So what can hackers do? First of all, it is easy to find numerous manuals on the darkweb, where they observe sets of instructions on how to perform attacks on, for instance, SS7 networks. Malefactors can point at stealing operators' data, tracking subscribers' locations, committing fraud, and executing denial of service attacks.

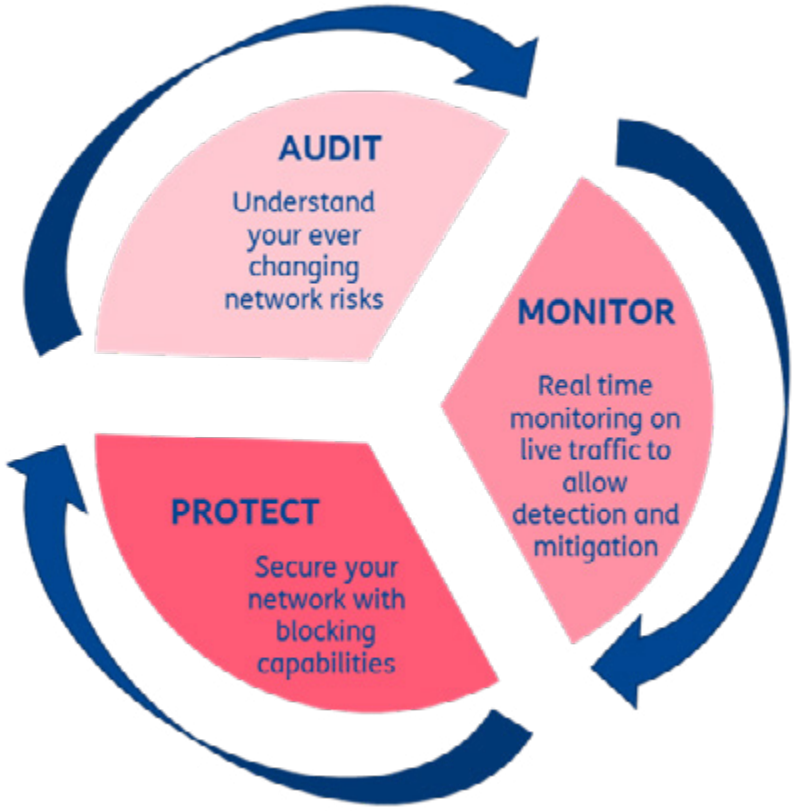
Needless to say that attacks have become more sophisticated over time, as the risk awareness of the industry is gradually increasing. Nonetheless, there are a number of recent cases where operators suffered the significant consequences of one or more attacks. An outage of only three hours which happened to a Norwegian network in 2017 caused serious financial loss.

And not only operators are at risk, but any company in the value chain of a service can be affected. Many banks are making use of two-factor authentication processes with One Time Passwords (OTP) by SMS. In Germany an operator that was struck by personal data theft for banking purposes saw a 7% decrease on the stock exchange market in just one day.

5G

AAnd what about 5G networks? The market expects networks to become increasingly more secure over time. On the one hand, industry organs as the GSMA have put lots of attention on the operators over the last years, providing binding security requirements in some cases and non-binding guidelines in others. On the other hand though, the fact that 5G networks have a different nature than its 'elder brothers' will make other kind of challenges come around and, therefore, attention to network security will progressively increase once 5G networks will become more popular and capillary.

5G networks are all-IP, virtualized and software defined, and not the typical networks we were used to in the past. They are merely forming a pure IT cloud infrastructure. The Signalling protocols that will be used in 5G networks (HTTPs/TLS based) are those commonly used in Internet technologies and web applications. Hence we are shifting from network security towards IT-cybersecurity, with new related threats.



IoT

With 5G networks the Internet of Things (IoT) will see its real take-up in the coming years. All kinds of devices will be connected to 5G networks, and often those devices will be part of an industry or an organization that is critical for a country. Devices that may even be residing in other networks, acting as (nearly) permanent roamers. Not human this time, but in a M2M (machine to machine) logic. Hence the increasing importance of taking care of security.

Generally speaking, preventing a network completely from intrusion will be hardly possible. You can easily define this as an illusion. It's all about (early) detection, and prompt mitigation afterwards through tuning and blocking suspicious traffic. Thus, detection of proper attacks in your network in real time is key. At the same time, regular vulnerability assessments are important to remain constantly aware of potential vulnerabilities. Operators should refrain from "only acting when it's too late".

During last years, Sparkle has been constantly increasing the focus on security aspects in its platform and offer. For more information on the Signalling Protection Suite for mobile connectivity, please visit https://www.tisparkle.com/our-platform/mobile-platform/sparkle-signalling-protection-suite#catalogue

Biography:

Melvin is senior product manager in the Marketing division, dealing with the development and go-to-market of wholesale services for Mobile Operators worldwide, that vary from pure connectivity to disruptive solutions as Big Data reporting tools and security/protection services.

Prior to joining Sparkle, he worked for TIM Group from 1998 to 2009 gaining a deep experience in mobile value added services for retail markets in Italy and abroad. He was appointed in several marketing roles as innovation specialist, product manager and customer base analyst.

He started his career as an ICT consultant at KPN in The Netherlands.

Melvin holds an MSc in Econometrics & Operations Research from the University of Groningen (The Netherlands).

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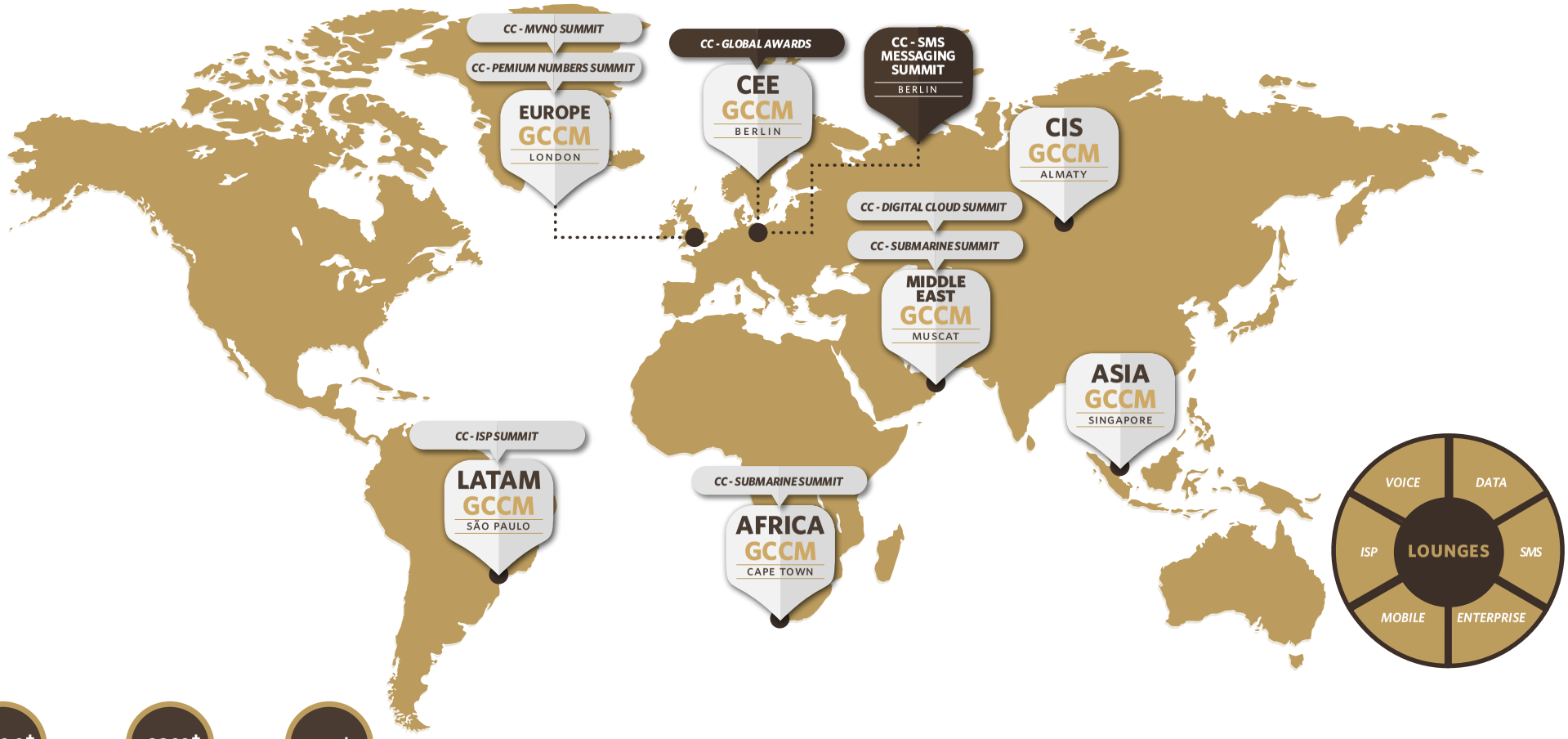

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