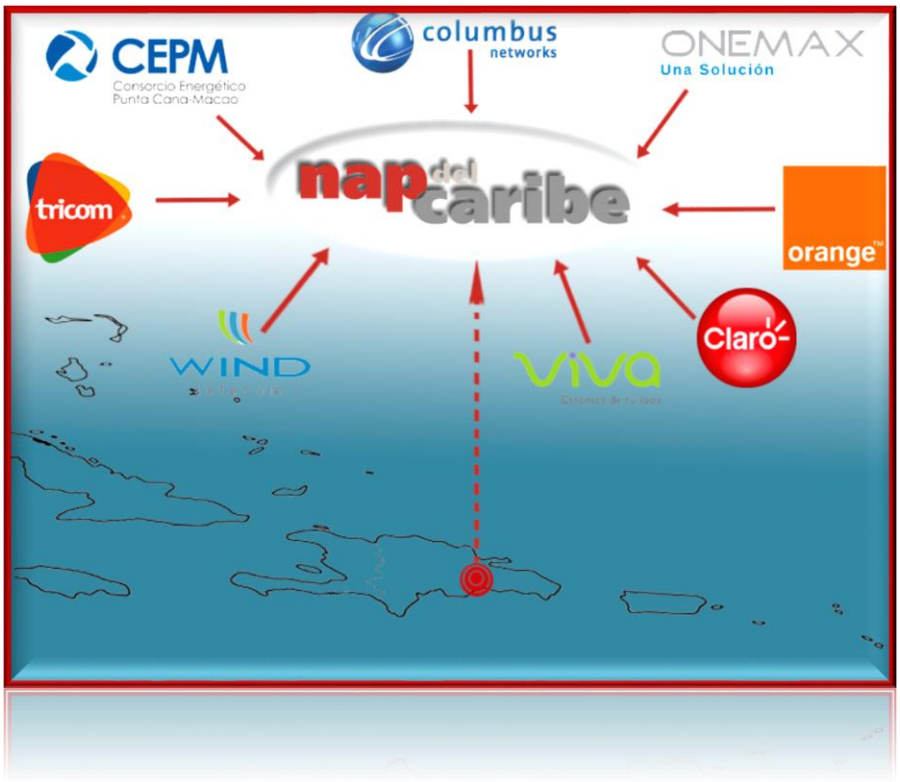
CASE STUDY: NAP del Caribe- A successful IXP initiative in the Dominican Republic and The Caribbean.



Background…….

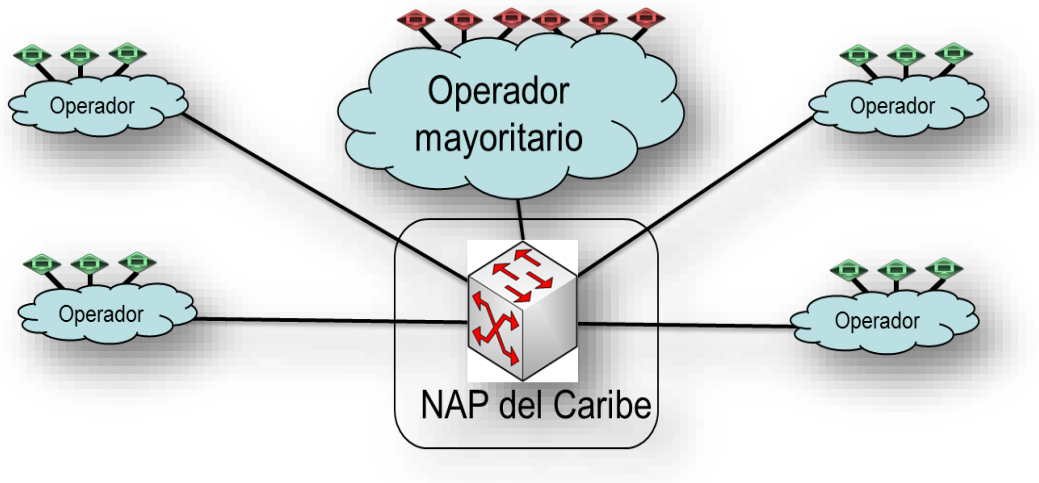
Nowadays, the Caribbean Region is in a demanding globally internet, traffic exchange and Technological revolution, which is forcing the region to rethink the business and industry model, in terms of connectivity and access as a sustainable strategy to reinforce the stabilities of our countries and to reduce the digital bridges. The Dominican Republic through INDOTEL (Instituto Dominicano de Telecomunicaciones/ Dominican Institute of Telecomunications) have developed several initiatives, regulations and incentives to create the perfect environment, stimulate and support the establishment of IXP´s, as a critical infrastructure of the region.

Therefore, as a private initiative with the support of the Dominican Government, during 2007 the first NAP (NETWORK ACCESS POINT) was born in the Dominican Republic. NAP del Caribe is the first carrier neutral internet exchange point in the Caribbean.
It was born to enhance the Regional and International exchange of Internet traffic in the Caribbean region and to trigger technology development in the Dominican Republic to prepare the country to participate in the global market for IT solution services.

NAP del Caribe uses a new business model of Internet Exchange, acting as a vendor neutral physical and logical interconnection point creating ¨virtual marketplaces¨ for

telecommunications carriers, IT Service Providers and public and private sector enterprises. Nowadays, NAP del Caribe acts as a magnet attracting a wide array of entities, including private enterprises, public sector entities and academic institutions that share a common physical and commercial platform.

Peering…..



NAP del Caribe counts with an advanced Peeing Platform (Internet Xchange Point) which is a place where the ISPs could interconnect there networks, facilitating the traffic exchange. NAP del Caribe is a neutral entity and doesn´t compete with the participants and telecommunicatios providers. The infrastructure of the Peering Point includes:

1. An Advanced Data Center
2. A Traffic Exchange and commutation Platform
3. A Server to facilitate the announcement of routes using BGP
4. Operations Services and support to the participants, as well as other services of aggregated value.

NAP del Caribe IXP is housed in the most advanced custom designed technology facility in the region featuring service levels of 100% for power and air conditioning services. NAP del Caribe is linked via diverse fiber routes. Also, have a state of the art physical and logical security. Is equipped with a Network Operations Center (NOC), which is fully staffed with highly skilled local and International IT Professionals. Below the detailed characteristics:

DATA CENTER CONSTRUCTION

- Outside of the flood hazard area (tsunamis).
- Located 3.5 KM away from the nearest water point.
- Elevated bulding 32 feet above sea level.
- Earthquakes and hurracanes resistant.
- Designed to withstand winds over 210kph.
- Builted under the concept ¨box in a box¨
- Located in the island´s most bedrock.

ACCESS AND CONNECTIVITY

- Best interconnected neutral point of the Caribbean
- Multiple conduit entries optical fiber.
- Presence of the top telecommunications providers national and international of the region
- Over 800 linear kilometers of fiber arriving at the NAP.
- Most advanced interconnection platform of the Region.
- Peering platform

POWER

- Independent power substation with direct line to the 69,000 volt connection of the Dominican Republic.
- Emergency generators, UPS systems and fuel tanks to maintain continues operation for a continuous period of 14 days.

ENVIRONMENT

- 2N + 1 redundancy on power and temperature
- Housing, energy and air conditioning contractually guaranteed.

NAP Del Caribe considered the following aspects in the design of its Exchange Platform:

1. **Scalability:** The platform will support expansion in terms of additional services as scalable performance.
2. **Standard based design:** NAP del Caribe design was centered to support customer connectivity needs at the optical, Ethernet and IP layers using industry standards and state of the art technology.
3. **Security Oriented:** The NAP design enhance the security of the customer infrastructure as well as the secure communications among the customers.

4. **Operational Stability:** The NAP design include solutions to enhance operability and reliability.
5. **Reliability:** Throughout the design of the NAP redundancy and reliability are standards that have been present since the beginning of the operations.
6. **Manageability:** SNMP based managed platform and provide redundant components to reduce the cost of operations.

Benefits……..

The development of NAP del Caribe in Santo Domingo, Dominican Republic generate a number of ancillary benefits to the local and national economy. The NAP del Caribe IXP benefit the Dominican Republic by:

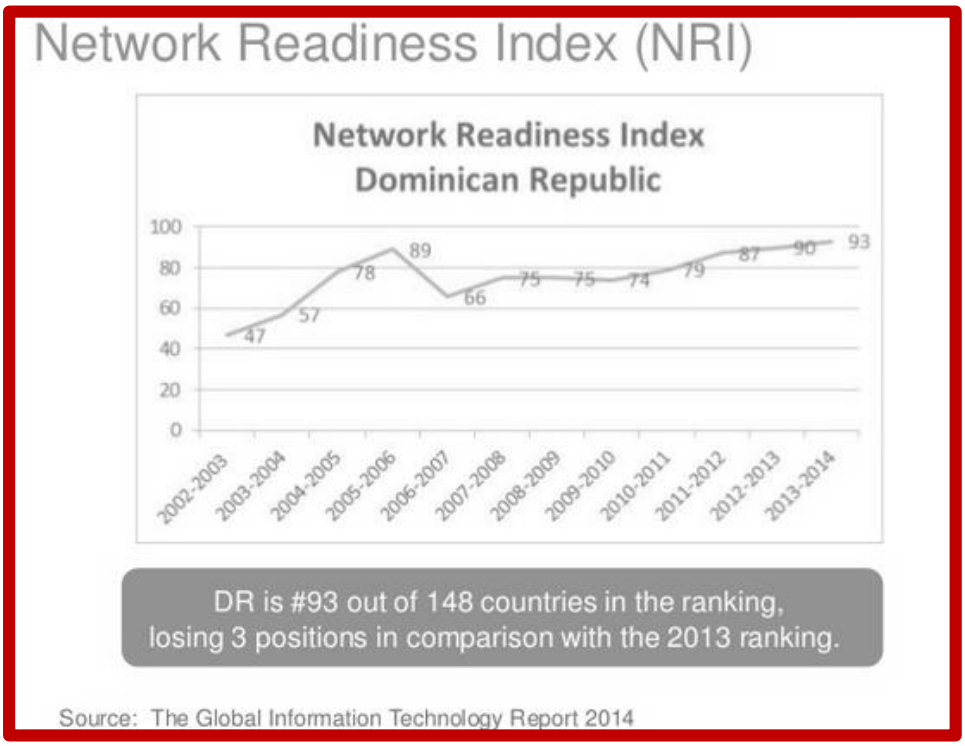
1. Significally increasing the connectivity to and from the country and development on the telecommunication industry.
2. Significantly reducing bandwidth prices by increasing the number of providers connected to the national network, and by promoting the utilization of peering arrangements.
3. Serves as a magnet for attracting local and international companies to the area, especially the content providers.
4. Expanding the knowledge base and skill sets of local labor force.
5. Serving as an engine for job creation, as new companies coming into the area.
6. Positive impact to research and educations, as local universities may be able to participate in global research projects such as Internet2 initiative.
7. Increase competitiveness in local companies.
8. Positioning the Dominican Republic as a center for outsourcing and export of technology services to the Caribbean and Latin America.
9. Improves the delivery of public services such as healthcare, educations and reducing its costs.
10. Increase the insertion of new services and technologies to the country such as Cloud Computing, Data Centers, Web Hosting, Security, Access, Monitoring and Business Continuity and Recovery.

Factors of success, Challenges and Opportunities ….

In the process of Development what is and was a determinant factor for success was the support of the public, private and academic sector. The NAP del Caribe success was also determine by our ability to become an integral part of the telecommunications topology of the of the Dominican Republic and having the presence of more than eight (8) national telecommunications providers. NAP del Caribe not only is connected to the most important fiber and satellite systems of the area, but also works hand in hand with the Government and Academic Sector to ensure that the benefits of the market place extend beyond the wall of the facility. For this reason, NAP has sought to work with the leading

public institutions. NAP as an IXP serves as engines for companies in the development and growth especially in markets that are in the development mode. The NAP del Caribe have been a tremendous stimulus to the country´s economy by attracting high technological multinational corporations.

This is a huge opportunity for the Dominican Republic and the Caribbean, not only for the benefits that were already explained, but as an opportunity to position our region and increase the Network Readiness Index (NRI) who decreased during 2014. Please view below:



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