

## Consejo Ejecutivo

101ª reunión

Medellín (Colombia), 13 de septiembre de 2015

Punto 2 g) del orden del día provisional

CE/101/2(g)

Madrid, 10 de agosto de 2014

Original: inglés

### Asuntos administrativos y estatutarios

#### g) Tecnologías de la información y las comunicaciones en la Secretaría

##### I. Introducción

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1. El Programa de Tecnologías de la Información y las Comunicaciones (TIC) es un servicio esencial de apoyo dentro de la OMT, cuyo cometido es hacer que las tecnologías faciliten el desempeño de las funciones básicas de trabajo de la Organización. Es además uno de los principales cauces de comunicación con los interlocutores internos y externos. En el presente documento se aporta información sobre la ejecución del programa de trabajo sobre TIC y un resumen de los planes venideros.
2. El Programa de TIC presta servicios a más de 200 usuarios internos, así como a los Estados Miembros. Entre sus funciones básicas están el mantenimiento de una infraestructura interna de 25 servidores y más de 250 computadoras en red, la gestión de la plataforma interna de colaboración e información (INTRANET/EXTRANET), el desarrollo y el mantenimiento de los sistemas de información, y la integración de aplicaciones tecnológicas comunes, así como de los servicios de asistencia al personal y de formación sobre sistemas. El Programa de TIC también se encarga de la gestión del acceso institucional y el mantenimiento de computadoras personales y equipos portátiles, tales como computadoras y periféricos, así como tabletas y otros dispositivos móviles. A principios de 2015, la gestión técnica y administrativa de la infraestructura de los servicios web ha pasado a ser una nueva responsabilidad de TIC con el fin de alojar los servicios relativos a tecnologías de la información en soluciones de informática en la nube.
3. Los avances y los continuos cambios tecnológicos, el incremento del riesgo vinculado a la seguridad de los datos y los sistemas, y la mayor exigencia de fiabilidad de los servicios prestados hacen que la gestión de esta área resulte sumamente compleja, sobre todo si se tiene en cuenta su limitadísima dotación de personal.
4. De conformidad con su decisión 13(XCIV), el Consejo Ejecutivo acogió con satisfacción la iniciativa del Secretario General de mantenerle regularmente informado sobre la estrategia y la evolución del programa de trabajo sobre TIC. El presente informe se ha elaborado para responder a esos objetivos, aportando información sobre 2014-2015 y una sinopsis de las actividades en curso y futuras en materia de TIC.



5. Como ya se mencionó en el informe de la 96ª reunión del Consejo Ejecutivo, el Secretario General aprobó la propuesta de TIC de llevar a cabo una segunda auditoría tecnológica global en 2014. Se trata de una continuación de la auditoría realizada en 2009. Cabe esperar que el resultado de esta auditoría, efectuada por Microsoft, y cuyo resumen y constataciones se adjuntan (**Anexo I**), ofrezca una orientación clara para la formulación de un plan estratégico de TIC de aquí a 2017.

6. Como resultado de las recientes recomendaciones formuladas en la auditoría de Microsoft, una de las primeras medidas consistió en trasladar la gestión, unificada, de la infraestructura de los servicios web al Programa de TIC, que se ocupará también de atender a las nuevas necesidades en lo que a infraestructura se refiere, si bien los contenidos web seguirán bajo la responsabilidad del Programa de Comunicación. Por lo tanto, la gestión de los servicios web es una gestión compartida entre el Programa de Comunicación y el de Tecnologías de la Información y las Comunicaciones: las solicitudes de nuevos servicios o de cambios se gestionan a través del Programa de Comunicación, pero es el Programa de TIC el que las lleva a la práctica. La plataforma de servicios web se encuentra en la nube.

7. Otra medida importante adoptada atendiendo a las recomendaciones de la auditoría consistió en crear el Comité Director de Tecnología, con el objetivo primordial de definir la respuesta de la Organización a los desafíos tecnológicos identificados en el informe de auditoría y trazar la hoja de ruta: prioridades, objetivos y actividades. De las doce medidas principales señaladas en la auditoría de Microsoft, el Comité decidió centrarse en seis de ellas, que consideró prioritarias, conceptualizándolas y preparando una hoja de ruta para cada una (véase el **Anexo IV**). El Comité está integrado por representantes de las principales áreas de la Secretaría y está presidido por el Director de Administración y Finanzas. Desde su creación en 2014, el Comité ha celebrado siete reuniones.

## **II. Programa de trabajo efectuado hasta la fecha**

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8. Desde el informe presentado en la 99ª reunión del Consejo Ejecutivo (octubre de 2014) hasta la fecha de este informe, se han llevado a cabo algunos proyectos específicos, cuyos resultados se muestran en el **Anexo II**.

## **III. Programa de trabajo en curso (2015-2016)**

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9. Como figuraba en el informe presentado en la 99ª reunión del Consejo Ejecutivo (octubre de 2014), están en curso los proyectos que figuran en el cuadro del **Anexo III**. En el cuadro se indican también los resultados previstos, teniendo en cuenta la actual auditoría TIC llevada a cabo por Microsoft y sus recomendaciones.

## **IV. Estrategia sobre TIC para 2016-2017**

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10. El informe de auditoría ofrece más detalles sobre todas las capacidades y volúmenes de trabajo del modelo de optimización de infraestructuras, fundamento en que se asientan las constataciones clave. Es importante subrayar que muchas de estas constataciones van más allá de la responsabilidad exclusiva de TIC y es el Equipo de Alta Dirección el que ha de tomar ciertas decisiones. El Comité Director de Tecnología es responsable de presentar a la Dirección las recomendaciones necesarias para que tome sus decisiones.

11. Tal como ha demostrado y verificado el informe de auditoría de Microsoft, todas las

constataciones previas que se presentaron al Consejo Ejecutivo en su 94ª reunión han sido abordadas. También se han logrado avances significativos en muchas de las capacidades y volúmenes de trabajo de las infraestructuras básicas y de productividad en el trabajo.

12. Como se mencionó en el anterior informe, la plataforma de aplicaciones es el ámbito en el que ha habido menos progresos desde la auditoría anterior, y aunque se ha desarrollado un nuevo sistema de información financiera, basado en metodologías formales de desarrollo, hay muchas aplicaciones asociadas que necesitan aún reconvertirse, y hace falta definir un modelo de desarrollo de aplicaciones para toda la Organización.

13. La OMT debería estudiar la posibilidad de promover una cultura de gestión de proyectos en torno a todas las actividades, iniciativas y proyectos que emprenda. Ello ayudaría a seguir los avances de los proyectos y a la gestión global de los recursos.

14. El Programa de TIC considera que los principales planes de infraestructura básica y productividad en el trabajo quedarán concluidos con los proyectos programados para el periodo 2014-2015, y el foco de atención deberá desplazarse urgentemente a un modelo de datos global para todos los datos gestionados por la OMT y el desarrollo de aplicaciones.

15. En un entorno tecnológico en rápida evolución, hay un número importante de cuestiones que también deben abordarse relacionadas con el marco de seguridad necesario para preservar la integridad de los equipos y sistemas de información de la OMT, a la vez que esta avanza en la conformidad con los mandatos de las Naciones Unidas y la aplicación de buenas prácticas.

16. La función y la estructura del Programa de TIC siguen adaptándose en función de los cambios en la estructura institucional de la OMT y la aparición de nuevas tecnologías a fin de optimizar la prestación de servicios y garantizar la satisfacción de los usuarios.

17. El Programa de TIC deberá ajustar constantemente su programa de trabajo para tratar estos asuntos y ofrecer un marco adecuado de evolución constante, conformidad y planificación, plasmado en una hoja de ruta bienal revisada que se presentará a la próxima reunión del Consejo Ejecutivo. A pesar de la dificultad del cometido, se ha efectuado un control riguroso de los recursos, lo cual plantea un desafío para la ejecución del programa de trabajo en los plazos previstos.

18. La formulación del programa de trabajo de TIC para 2015-2017 gira en torno a las constataciones clave de la auditoría y las recomendaciones de Microsoft. Las propuestas a alcanzar se resumen en el cuadro del **Anexo IV**.

## V. Actuaciones propuestas al Consejo Ejecutivo

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19. Se invita al Consejo Ejecutivo a que:

- a) Tome nota de los informes de auditoría que forman parte de este documento y que explican el estado en que se encuentran las actividades relativas a las TIC;
- b) Tome nota de los progresos en la infraestructura tecnológica que ha alcanzado ya la Organización, reconociendo que la rapidez con que evoluciona el entorno tecnológico y las restricciones presupuestarias plantean una serie de retos singulares en un futuro próximo.

## Annex I. Executive Summary of the Microsoft Audit on Infrastructure Optimization Assessment on UNWTO

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As part of the Partnership between Microsoft and the United Nations World Tourism Organization (UNWTO), on June 30th and July 1st 2009, Microsoft conducted an Infrastructure Optimization Assessment on UNWTO's Information & Communication Technology (ICT) area.

As part of the continued evolution of UNWTO's IT assets, ICT requested again that Microsoft ran a new assessment to compare progress against the maturity levels of 2009, focusing again on all three IO Models:

- Core Infrastructure Optimization (Core IO)
- Business Productivity Infrastructure Optimization (BP IO)
- Application Platform Optimization (APO)

This analysis, conducted between the days of May 7<sup>th</sup> and June 27<sup>th</sup>, also identifies, jointly in consensus with ICT, the future desired state of all capabilities and workloads of each IO model. This will help UNWTO in defining the future initiatives it must work on in order to reach a state where it is comparable to the desired maturity levels defined.

The results of the IO assessment look forward to helping UNWTO in:

- Aligning IT strategies to Business strategies.
- Identifying and structuring key initiatives for UNWTO's maturity evolution moving forward.
- Guarantee that the maximum benefits on UNWTO's technologies investment are being realized.
- Guarantee that a common approach to initiative development is followed in order to avoid effort duplication and that any solution provided is based on the knowledge of all the initiatives taking place and the strategy defined.
- Guarantee that the future development, deployment and operation of the solutions respond correctly UNWTO's business needs and its user needs.

Additionally, a special mention has to be made regarding the IO model itself, which has evolved from the previous assessment due to the appearance of the new megatrends in the industry like Cloud, Social Computing, Enterprise Mobility, etc. which didn't exist or weren't as relevant as today. This report also intends to help UNWTO understand their current state on these new trends and provide guidance on how to move forward in their adoption.

This report goes into greater detail on all the capabilities and workloads of the IO Model, to support the key findings below. It is important to highlight that **many of these findings go beyond the sole responsibility of ICT and decisions need to be made at the Senior Management Team level to take action** on some of these findings.

Key Findings:

**General Improvement in Core IO and BPIO:** There has been good improvement from the previous audit in 2009 on many of the capabilities and workloads of the Core IO Model and the Business Productivity IO Model as it is shown in the report. The Application Platform is still very much in the same Basic state as in the previous audit, and although a new financial information system has been developed based on formal development methodologies, still many surrounding applications need to be reconverted and an organization-wide application development model needs to be defined.

In the area of **Core Infrastructure**, the main findings are:

**Virtualization.** UNWTO has clearly embraced virtualization of all its workloads and implemented to an acceptable degree of monitoring, management and reporting of deployed systems. The Public Web is completely virtualized as well. This has helped UNWTO in consolidating into fewer physical servers the server footprint that existed in 2009, which in terms have help provide better availability and disaster recovery to the overall infrastructure.

**Public Web Assets totally decoupled from ICT governance.** The fact that ICT's infrastructure and the Public Web are deployed and managed by different entities (the former by ICT and the latter by an external provider not linked with ICT), makes it harder to maintain a total control of the server infrastructure regarding compliance, monitoring and reporting to upper management on the health status of services, as well as additional solution, administration and support costs. Moreover, it represents a risk to UNWTO as these assets are not governed at all by the organization's policies. The recommendation is to move and consolidate the infrastructure governance under ICT as well as the future development needs of this infrastructure, while the content publishing responsibility remaining with the Corporate Communications department. This means that all Public Web services would become ICT services and the Corporate Communications department would be its main customer.

Additional findings are a direct consequence or have a direct relationship with the previous finding:

- **Myriad of solutions for same purposes (no standardization) and use of commercial open source software.** it comes to our attention that UNWTO's has chosen many different virtualization, monitoring & management solutions, with apparently no interoperability / communications between them, based on commercial open source and/or community software, with no formal roadmap regarding their evolution and where additional services need to be purchased to get access to newer versions or support. This is aggravated by the fact that different solutions are in place to do the same thing whether on-premises or on the Public Web infrastructure, adding up to admin & support costs, as well as licensing costs. This represents both a risk and a high cost component as it requires a lot of effort to build a consolidated view of the platform. A TCO study around the true cost of these solutions (HW, SW, Administration, Support, etc.) against a centralized and unified platform should be done in order to validate whether a change of strategy is necessary. UNWTO should definitely work in consolidating and standardizing its Internal and Public Web assets.
- **Identity consolidation, synchronization and federation.** UNWTO should look into consolidating identities and using SSO for all of their IT assets be it internal or Public. This will require defining a directory synchronization and federation strategy between them in order to provide a true identity solution for cloud based services.

**No Cloud culture.** Although virtualization has been embraced at the core of the IT organization, there is no cloud culture or cloud awareness in terms of private, public and/or hybrid cloud, which is an area of opportunity UNWTO needs to move towards for many additional benefits to be gained in terms of flexibility, elasticity, scalability, disaster recovery, lower TCO, while at the same time enabling the organization to determine the real costs per UNWTO's department, which could eventually be used to create a chargeback model if desired.

**Architecture design based on traditional architecture principles.** The new cloud world has created newer architecture principles that UNWTO needs to be aware of with regards to Enterprise Architecture (for instance, multiple cheap storage pools vs. traditional SAN based storage), and which will need to be reflected on and decide on whether a strategy change is in order. These include changes in the following architectural areas:

- Infrastructure Architecture (Server, Network, Storage, Clients, etc.)
- Information Architecture (Collaboration, Social, Search, etc.)
- Solution Architecture (Application Infrastructure and Framework, Development Lifecycle, etc.)

**Device mindset to User mindset.** UNWTO has made important efforts in keeping its client platform updated, focusing principally on the device. A modern approach to client platform deployment puts the user in the center as the subject to manage, instead of the device. This impacts many traditional strategies around client platform management, including operating system deployment, software distribution, application virtualization, user state, roaming, etc. that need to be looked into by UNWTO. (Refer to the Persona Analysis suggestion mentioned in the “What’s Next” chapter).

**IT Processes & Compliance.** Although work has been done in order to define ICT’s Service Catalog and several policies have been put in place, there is still much work to do in this area, starting with the definition of clear Service Level Agreements and Operation Level Agreements, better Security monitoring, Problem, Change & Configuration Management and finally with Self-Service capabilities for users.

In the area of **Business Productivity Infrastructure**, the main findings are:

**Lack of true Enterprise Mobility.** In today’s cloud and devices world, it is uncommon for employees to request access to corporate assets from their devices to be able to keep up to speed with work at any time and from anywhere they are. UNWTO needs to improve its Remote Access Services and define a clear “Bring Your Own Device” strategy that will enable the majority of the organization (no only selected users) to be able to be more productive. Some work is under way on this area, but additional improvements are required to achieve this vision.

**Moving Commodity based IT to Cloud based solutions.** A lot of infrastructure has been deployed over the years which has been deemed Commodity IT by the industry for some time now. UNWTO should look into the benefits (TCO comparison) of Commoditizing IT Services to Hybrid Cloud solutions which can be operated by less that might be costing to have those services still on-premises. This applies mainly to Business Productivity Infrastructure solutions such as Messaging, Unified Communications, Collaboration & Content Management. If this is not the case, UNWTO should still look into upgrading its Business Productivity Infrastructure to the latest versions as many new trends and technologies have been incorporated. Some work is already under way in the latter, as recent projects being implemented go to towards achieving this (i.e. SharePoint 2013 upgrade)

**No Social Computing Culture.** In today’s world, the ability to share information in a “social manner” has crawled beyond the public social networks into the enterprise. Creating a true social culture in UNWTO will bring benefits in user productivity, innovation management, knowledge retention and subject matter experts identification.

**Project Management & Portfolio Planning:** A lack of formal project management and portfolio planning has been identified.

UNWTO should look promoting a project management culture in the organization around all the activities, initiatives and projects it undertakes. This will help in a much better resource management and project following for all the organization. Additionally, UNWTO should look into implementing a project portfolio management infrastructure, once a project management culture has been established, as this will help define priorities within the organization, based on UNWTO's resources and returned value delivered by the projects.

In the area of **Application Platform**, the main findings are:

**No Data Culture.** This area represents one of the biggest areas of risk and improvement for UNWTO. There isn't a comprehensive understanding of all the data existing in the organization. No organization-wide data model exists for all UNWTO's managed data. UNWTO needs to improve its *data classification, indexing, publishing, protection (encryption, rights management) and auditing* strategies for the organizational data. This will add value to the organization as will make users more "aware" of the data they can use and how to use it.

**No Business Intelligence or Big Data culture:** In today's competitive landscape, it is of utmost importance to be able to gather & process data almost in real time in order to take informed decisions on company strategy. UNWTO should look into creating a Business Intelligence platform and a Big Data platform that will take all the organization information as well as unstructured information found in the web to provide business analysts with better information on which to build UNWTO's publications and any other information assets it might need to build.

**No Custom Development Framework and Lifecycle.** UNWTO's current Application Infrastructure is based on siloed/monolithic applications with no interaction or communications between them. UNWTO should look into creating an organization wide Application Infrastructure & Development framework to work towards creating a more cohesive application environment, providing maximum value to the business.

21 July 2014

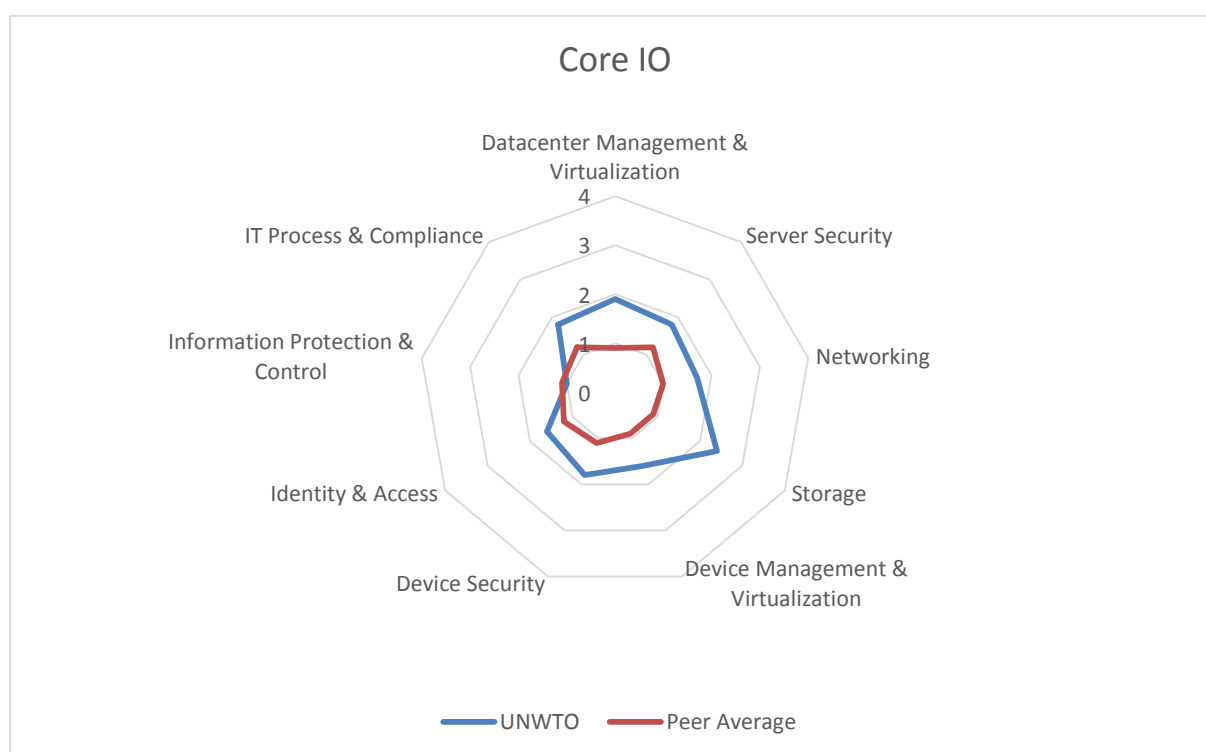
Following is an extract of the report entitled "United Nations World Tourism Organization Infrastructure Optimization Assessment" carried out by Microsoft Auditors whose original text is available in: <http://lmd.unwto.org/event/executive-council-ninety-ninth-session>

## Core Infrastructure Optimization Profiles for UNWTO

### Current Profile for ICT (AS IS)

| Capabilities                                      | Workloads                              | Workload Elements |              |              |         | Total     |
|---------------------------------------------------|----------------------------------------|-------------------|--------------|--------------|---------|-----------|
|                                                   |                                        | Basic             | Standardized | Rationalized | Dynamic |           |
| <b>Datacenter Management &amp; Virtualization</b> | Datacenter Management & Virtualization | 2                 | 9            | 1            |         | 12        |
|                                                   | Server Security                        | 1                 | 4            |              |         | 5         |
|                                                   | Networking                             | 3                 | 2            | 1            |         | 6         |
|                                                   | Storage                                | 1                 | 3            | 4            |         | 8         |
| <b>Device Deployment &amp; Management</b>         | Device Management & Virtualization     | 6                 | 10           |              |         | 16        |
|                                                   | Device Security                        | 1                 | 3            |              |         | 4         |
| <b>Identity &amp; Security Services</b>           | Identity & Access                      | 2                 | 3            |              |         | 5         |
|                                                   | Information Protection & Control       | 5                 |              |              |         | 5         |
| <b>IT Process &amp; Compliance</b>                | IT Process & Compliance                | 4                 | 11           | 1            |         | 16        |
| <b>Total</b>                                      |                                        | <b>25</b>         | <b>45</b>    | <b>7</b>     |         | <b>77</b> |

### Current Maturity Peer Review Comparison (ICT)

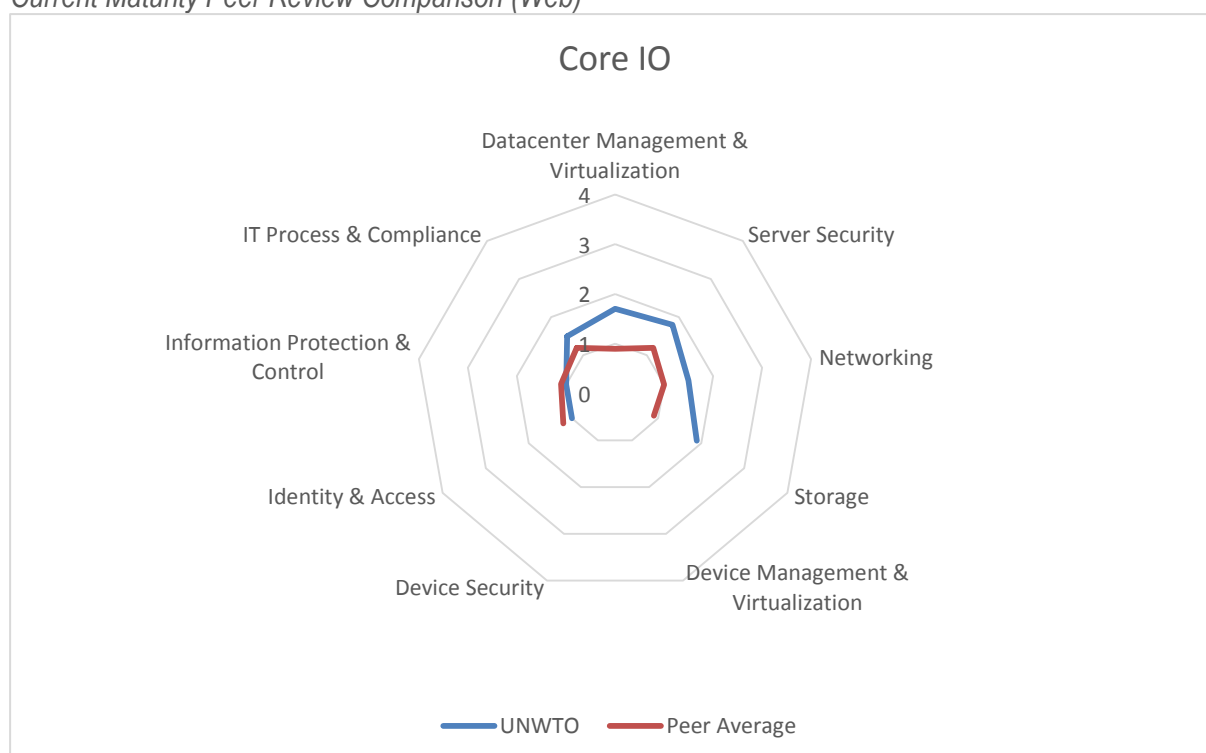


Comparison of current infrastructure optimization versus peer average performers in Nonprofit, from EMEA. The peer data is collected and aggregated from all participants using this tool. This data is maintained according to privacy policies and only presented in aggregate form: Basic - 1, Standardized - 2, Rationalized - 3, Dynamic - 4

### Current Profile for Public Web (AS IS)

| Capabilities                                      | Workloads                              | Workload Elements |              |              |         | Total     |
|---------------------------------------------------|----------------------------------------|-------------------|--------------|--------------|---------|-----------|
|                                                   |                                        | Basic             | Standardized | Rationalized | Dynamic |           |
| <b>Datacenter Management &amp; Virtualization</b> | Datacenter Management & Virtualization | 4                 | 8            |              |         | 12        |
|                                                   | Server Security                        | 1                 | 4            |              |         | 5         |
|                                                   | Networking                             | 3                 | 3            |              |         | 6         |
|                                                   | Storage                                | 2                 | 5            | 1            |         | 8         |
| <b>Device Deployment &amp; Management</b>         | Device Management & Virtualization     | N/A               | N/A          | N/A          | N/A     | N/A       |
|                                                   | Device Security                        | N/A               | N/A          | N/A          | N/A     | N/A       |
| <b>Identity &amp; Security Services</b>           | Identity & Access                      | 5                 |              |              |         | 5         |
|                                                   | Information Protection & Control       | 5                 |              |              |         | 5         |
| <b>IT Process &amp; Compliance</b>                | IT Process & Compliance                | 8                 | 8            |              |         | 16        |
| <b>Total</b>                                      |                                        | <b>28</b>         | <b>28</b>    | <b>1</b>     |         | <b>57</b> |

### Current Maturity Peer Review Comparison (Web)



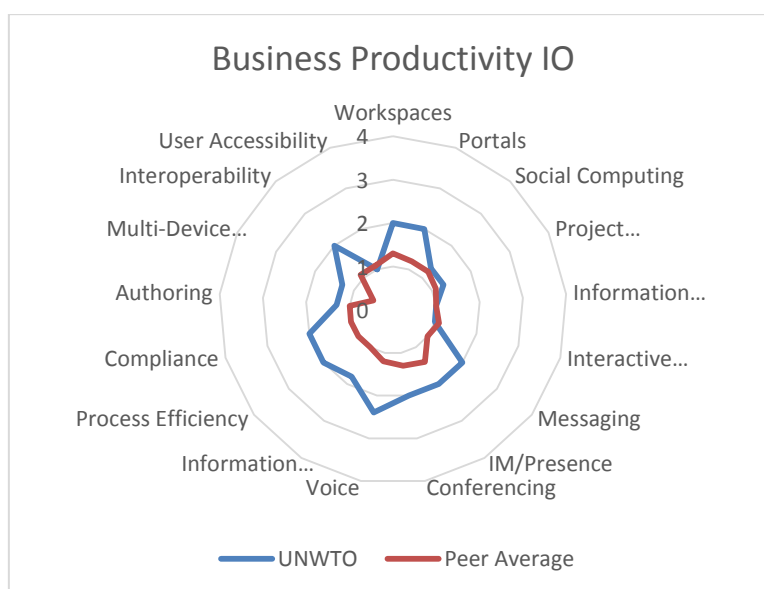
Comparison of current infrastructure optimization versus peer average performers in Nonprofit, from EMEA. The peer data is collected and aggregated from all participants using this tool. This data is maintained according to privacy policies and only presented in aggregate form:  
Basic - 1, Standardized - 2, Rationalized - 3, Dynamic - 4

## Business Productivity Infrastructure Optimization Profiles for UNWTO

### Current Profile for ICT (AS IS)

| Capabilities                             | Workloads                           | Workload Elements |              |              |         | Total     |
|------------------------------------------|-------------------------------------|-------------------|--------------|--------------|---------|-----------|
|                                          |                                     | Basic             | Standardized | Rationalized | Dynamic |           |
| <b>Collaboration</b>                     | Workspaces                          | 1                 | 1            | 1            |         | 3         |
|                                          | Portals                             | 1                 | 2            | 1            |         | 4         |
|                                          | Social Computing                    | 2                 | 1            |              |         | 3         |
|                                          | Project Management                  | 2                 | 1            |              |         | 3         |
|                                          | Information Access                  | 3                 |              |              |         | 3         |
|                                          | Interactive Experience & Navigation | 1                 |              |              |         | 1         |
| <b>Messaging</b>                         | Messaging                           | 2                 | 2            | 2            |         | 6         |
| <b>Unified Communications</b>            | IM/Presence                         |                   | 3            |              |         | 3         |
|                                          | Conferencing                        |                   | 3            |              |         | 3         |
|                                          | Voice                               |                   | 3            | 2            |         | 5         |
| <b>Content Creation &amp; Management</b> | Information Management              | 1                 | 3            |              |         | 4         |
|                                          | Process Efficiency                  |                   | 3            |              |         | 3         |
|                                          | Compliance                          |                   | 2            |              |         | 2         |
|                                          | Authoring                           | 2                 | 1            |              |         | 3         |
|                                          | Multi-Device Support                | 2                 | 1            |              |         | 3         |
|                                          | Interoperability                    |                   | 1            |              |         | 1         |
|                                          | User Accessibility                  | 2                 |              |              |         | 2         |
| <b>Total</b>                             |                                     | <b>19</b>         | <b>27</b>    | <b>6</b>     |         | <b>52</b> |

### Current Maturity Peer Review Comparison (ICT)

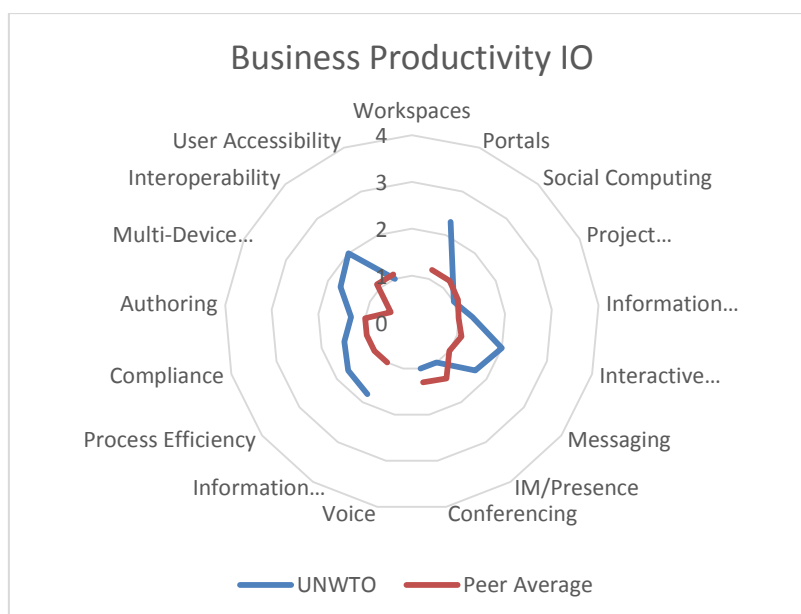


Comparison of current infrastructure optimization versus peer average performers in Nonprofit, from EMEA. The peer data is collected and aggregated from all participants using this tool. This data is maintained according to privacy policies and only presented in aggregate form:  
Basic - 1, Standardized - 2, Rationalized - 3, Dynamic - 4

## Current Profile for Public Web (AS IS)

| Capabilities                             | Workloads                           | Workload Elements |              |              |         | Total      |
|------------------------------------------|-------------------------------------|-------------------|--------------|--------------|---------|------------|
|                                          |                                     | Basic             | Standardized | Rationalized | Dynamic |            |
| <b>Collaboration</b>                     | Workspaces                          | N/A               | N/A          | N/A          | N/A     | <b>N/A</b> |
|                                          | Portals                             | 1                 | 1            | 2            |         | <b>4</b>   |
|                                          | Social Computing                    | 2                 | 1            |              |         | <b>3</b>   |
|                                          | Project Management                  | 3                 |              |              |         | <b>3</b>   |
|                                          | Information Access                  | 2                 | 1            |              |         | <b>3</b>   |
|                                          | Interactive Experience & Navigation |                   | 1            |              |         | <b>1</b>   |
| <b>Messaging</b>                         | Messaging                           | 2                 |              | 1            |         | <b>3</b>   |
| <b>Unified Communications</b>            | IM/Presence                         | 3                 |              |              |         | <b>3</b>   |
|                                          | Conferencing                        | 3                 |              |              |         | <b>3</b>   |
|                                          | Voice                               | N/A               | N/A          | N/A          | N/A     | <b>N/A</b> |
|                                          |                                     |                   |              |              |         |            |
| <b>Content Creation &amp; Management</b> | Information Management              | 2                 | 1            | 1            |         | <b>4</b>   |
|                                          | Process Efficiency                  | 1                 | 2            |              |         | <b>3</b>   |
|                                          | Compliance                          | 1                 | 1            |              |         | <b>2</b>   |
|                                          | Authoring                           | 2                 | 1            |              |         | <b>3</b>   |
|                                          | Multi-Device Support                | 2                 |              | 1            |         | <b>3</b>   |
|                                          | Interoperability                    |                   | 1            |              |         | <b>1</b>   |
|                                          | User Accessibility                  | 2                 |              |              |         | <b>2</b>   |
| <b>Total</b>                             |                                     | <b>26</b>         | <b>10</b>    | <b>5</b>     |         | <b>41</b>  |

## Current Maturity Peer Review Comparison (Web)



Comparison of current infrastructure optimization versus peer average performers in Nonprofit, from EMEA. The peer data is collected and aggregated from all participants using this tool. This data is maintained according to privacy policies and only presented in aggregate form: Basic - 1, Standardized - 2, Rationalized - 3, Dynamic - 4

## Application Platform Optimization Profiles for UNWTO

### Current Profile for ICT (AS IS)

| Capabilities                       | Workloads                           | Workload Elements |              |              |         | Total     |
|------------------------------------|-------------------------------------|-------------------|--------------|--------------|---------|-----------|
|                                    |                                     | Basic             | Standardized | Rationalized | Dynamic |           |
| <b>BI &amp; Analytics Platform</b> | Business Intelligence               | 6                 |              |              |         | 6         |
|                                    | Data Warehouse Management           | 6                 |              |              |         | 6         |
|                                    | Big Data                            | 3                 |              |              |         | 3         |
|                                    | Information Services & Marketplaces | 4                 |              |              |         | 4         |
| <b>Database and LOB Platform</b>   | Transaction Processing              | 2                 | 2            |              |         | 4         |
|                                    | Data Management                     | 2                 | 1            |              |         | 3         |
|                                    | Application Infrastructure          | 5                 | 1            |              |         | 6         |
| <b>Custom Development</b>          | Internet Applications               | 3                 |              |              |         | 3         |
|                                    | Component & Service Composition     | 5                 |              |              |         | 5         |
|                                    | Enterprise Integration              | 2                 |              |              |         | 2         |
|                                    | Development Platform                | 1                 | 1            |              |         | 2         |
|                                    | Application Lifecycle Management    | 5                 | 1            |              |         | 6         |
| <b>Total</b>                       |                                     | <b>44</b>         | <b>6</b>     |              |         | <b>50</b> |

### Current Profile for Public Web (AS IS)

| Capabilities                       | Workloads                           | Workload Elements |              |              |         | Total    |
|------------------------------------|-------------------------------------|-------------------|--------------|--------------|---------|----------|
|                                    |                                     | Basic             | Standardized | Rationalized | Dynamic |          |
| <b>BI &amp; Analytics Platform</b> | Business Intelligence               | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Data Warehouse Management           | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Big Data                            | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Information Services & Marketplaces | N/A               | N/A          | N/A          | N/A     | N/A      |
| <b>Database and LOB Platform</b>   | Transaction Processing              | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Data Management                     | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Application Infrastructure          | 1                 | 2            |              |         | 3        |
| <b>Custom Development</b>          | Internet Applications               | 1                 | 1            | 1            |         | 3        |
|                                    | Component & Service Composition     | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Enterprise Integration              | N/A               | N/A          | N/A          | N/A     | N/A      |
|                                    | Development Platform                | 1                 | 1            |              |         | 2        |
|                                    | Application Lifecycle Management    | N/A               | N/A          | N/A          | N/A     | N/A      |
| <b>Total</b>                       |                                     | <b>3</b>          | <b>4</b>     | <b>1</b>     |         | <b>8</b> |

## Annex II. ICT Programme of work completed to date

| AREA                                                       | ACTIVITY/PROJECT                                                                                        | RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                 | DATE COMPLETED                               |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Business Productivity Infrastructure / Enterprise Mobility | Mobility Services                                                                                       | <ul style="list-style-type: none"> <li>Implement a new platform for management of remote control of mobile devices (MDM)</li> <li>Improve security procedures</li> <li>Define &amp; Implement data protection policies</li> <li>BYOD implementation to improve the user experience at work -Phase I</li> <li>BYOD implementation to improve the user experience at work –Phase II</li> <li>ShareFile Service</li> </ul> | Completed 2015                               |
| Core infrastructure / Data Centre                          | ICT Consolidation & Services                                                                            | <ul style="list-style-type: none"> <li>DC Server migration from Microsoft Windows Server 2008 to Microsoft Windows Server 2012</li> <li>Integration of old DC server cluster in only one VM DC Server to optimize the usage of the hardware</li> <li>Hardware server extension, focus on the virtual desktop project</li> </ul>                                                                                         | Completed 2015                               |
| Core infrastructure Data Centre Management                 | Business continuity planning                                                                            | <ul style="list-style-type: none"> <li>Updated contingency plan</li> <li>Expanded the infrastructure that supports the backup services. Full replication of main servers on different location than DPC</li> </ul>                                                                                                                                                                                                      | Completed 2015                               |
| Core infrastructure / Data Centre                          | Web Services infrastructure                                                                             | <ul style="list-style-type: none"> <li>External full audit of the state of the Web Site infrastructure</li> </ul>                                                                                                                                                                                                                                                                                                       | Completed 2015                               |
| Business Productivity / Content Creation & Management      | Collaborative Platform INTRANET/EXTRANET platform                                                       | <ul style="list-style-type: none"> <li>Improved and extended structures</li> <li>Provided a system of internal controls to allow for information sharing and author control (work flows) over content</li> </ul>                                                                                                                                                                                                        | Completed 2015                               |
| Core Infrastructure / IT Process & Compliance              | Implementation of IT Service Management best practices                                                  | <ul style="list-style-type: none"> <li>Adopted of some ITIL published guidelines. ITIL provides a cohesive set of best practices, drawn from international public and private sectors and are in compliance with UN agencies standards</li> </ul>                                                                                                                                                                       | Partly implemented<br>Target completion 2016 |
| Core Infrastructure / IT Process & Compliance              | Organizational approval of document standards, document procedures to establish policies and guidelines | <ul style="list-style-type: none"> <li>Approved existing drafts for document standards, document procedures, and proposed policies and guidelines</li> <li>Creation of new procedures of ICT internal controls</li> </ul>                                                                                                                                                                                               | Partly implemented<br>Target completion 2015 |
| ICT Priorities                                             | ICT Training annual plan 2014                                                                           | <ul style="list-style-type: none"> <li>Continued to enhance technical competency of ICT staff through external training and certification</li> </ul>                                                                                                                                                                                                                                                                    | Completed 2014                               |

**Annex III. ICT Programme of work in progress (2015-2016)**

| Area                                                             | ACTIVITY/PROJECT                                                          | EXPECTED RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EXPECTED COMPLETION DATE              |
|------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Application Platform/<br>Information Systems                     | Enhancement of Athena requirements in collaboration with Budget & Finance | <ul style="list-style-type: none"> <li>Two new modules of finance system information (Athena) based on IPSAS methodology – Phase II. Purchase Management and accounts payable modules.</li> <li>Maintenance of Athena I</li> <li>Databases &amp; information systems affected by IPSAS regulations adapted</li> </ul>                                                                                                                                                                                   | Target completion 2016 / Ongoing      |
| Core Infrastructure/<br>IT Services & Compliance                 | Printing services project                                                 | <ul style="list-style-type: none"> <li>Consolidation of printing services</li> <li>Provide management control, accessibility and control over confidentiality of printed material</li> <li>Reduce printing costs</li> <li>Support greening policies</li> <li>Update printing equipment to ensure compatibility with implemented software</li> <li>Establish an internal workgroup to establish current UNWTO printing policies and procedures</li> <li>Conduct a competitive bidding process</li> </ul> | Target completion 2015-2016           |
| Core Infrastructure /<br>Device Deployment & Management          | Telephony Services & mobility                                             | <ul style="list-style-type: none"> <li>Network improvements in security, devices management and quality of services</li> <li>Use of best technology practices</li> </ul>                                                                                                                                                                                                                                                                                                                                | Target completion 2016 / Ongoing      |
| Core Infrastructure /<br>IT Process & Compliance                 | Help Desk Platform                                                        | <ul style="list-style-type: none"> <li>Implemented a centralized request service to maximize the use of ICT resources to the Organization. – Phase I.</li> <li>Improved security, productivity and reduced IT overhead</li> </ul>                                                                                                                                                                                                                                                                       | Target completion 2016 / Ongoing      |
| Core Infrastructure /<br>Data centre Management & Virtualization | ICT Consolidation & services                                              | <ul style="list-style-type: none"> <li>Improved maintenance procedures, expansion and standardization</li> <li>Improved core server availability average (99.998%)</li> <li>Conducted performance optimization, operation and management of the virtualization platform</li> </ul>                                                                                                                                                                                                                      | Target completion 2016 / Ongoing      |
| Core infrastructure /<br>Data Centre Management                  | Web Services infrastructure                                               | <ul style="list-style-type: none"> <li>Change cloud service provider.</li> <li>Carry out consolidation of the new services and redo the entire infrastructure.</li> <li>Change of service provider technical support, new requirement definition 12x7</li> </ul>                                                                                                                                                                                                                                        | Target completion 2015 / Ongoing      |
| Core Infrastructure /<br>Datacentre Management                   | Business continuity planning                                              | <ul style="list-style-type: none"> <li>Conduct a disaster recovery drill exercise</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            | Target Completed 2015                 |
| Application Platform /<br>BI & Analytics Platform                | Enterprise Data Model / Organization-wide Data Consolidation              | <ul style="list-style-type: none"> <li>Create an organization-wide data model for all UNWTO's managed data.</li> <li>Improve data classification, indexing, and publishing.</li> <li>Improve data protection (encryption, rights management, etc.)</li> <li>Define policies &amp; procedures to data</li> </ul>                                                                                                                                                                                         | Target completion 2015-2016 / Ongoing |

| Area                                                 | ACTIVITY/PROJECT                                            | EXPECTED RESULTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EXPECTED COMPLETION DATE              |
|------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|                                                      |                                                             | management <ul style="list-style-type: none"> <li>Design auditing strategies for the organizational data</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                 |                                       |
| Core Infrastructure / Device deployment & Management | Desktop Virtualization project                              | <ul style="list-style-type: none"> <li>Implement a client platform deployment that puts the user in the centre as the subject to manage, instead of the device</li> <li>Define policies and procedures to implement client platform management, including operating system deployment, software distribution, application virtualization, user state, etc.</li> <li>Conduct a competitive bidding process</li> </ul>                                                                                | Target completion 2015-2016           |
| Business Productivity / Collaboration                | Collaborative Platform INTRANET/ EXTRANET Platform          | <ul style="list-style-type: none"> <li>Improve and extend structures</li> <li>Provide a system of internal controls to allow for information sharing and author control (work flows) over content</li> <li>Develop a knowledge management platform, self-service and reporting</li> <li>Implement search facilities</li> <li>Develop of new services</li> <li>Conduct a competitive bidding process if necessary</li> </ul>                                                                         | Target completion 2015-2016 / Ongoing |
| Business Productivity                                | New UNWTO WebSite & enhancing current Social Media strategy | <ul style="list-style-type: none"> <li>Hired Consultancy Company to produce a Web status report.</li> <li>Produce a terms of reference of Web assessment</li> <li>Conduct a competitive bidding process to hire a company to develop a new Web page</li> </ul>                                                                                                                                                                                                                                      | Target completion 2015-2016 / Ongoing |
| Business Productivity / Collaboration                | Digital signature project                                   | <ul style="list-style-type: none"> <li>Encourage the use of digital signature to support greening policies</li> <li>Streamline administrative processes</li> <li>Reduce costs</li> </ul>                                                                                                                                                                                                                                                                                                            | Target completion 2016                |
| Core Infrastructure / IT Process & Compliance        | ICT Service Catalogue                                       | <ul style="list-style-type: none"> <li>Review of the ICT services policies and obtain SCT approval</li> <li>Implement services policies organization-wide</li> <li>Improve ICT's Service Catalogue with the definition of clear Service Level Agreements and Operation Level Agreements</li> <li>Improve security monitoring and problem &amp; incidents management</li> <li>Design and define change &amp; configuration management</li> <li>Create self-service capabilities for users</li> </ul> | Target completion 2015 / Ongoing      |
| ICT priorities                                       | ICT Training annual plan 2015                               | <ul style="list-style-type: none"> <li>Continue to enhance technical competency of ICT staff through external training and certification</li> </ul>                                                                                                                                                                                                                                                                                                                                                 | Target Completion 2015 / Ongoing      |
| ICT Services and compliance                          | Videoconferences and conferences services                   | <ul style="list-style-type: none"> <li>Complete refurbishment of the Infrastructure of the nine floor.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   | Target completion 2016 / Ongoing      |

**Annex IV. ICT Programme of Work for 2015-2017**

|     | <b>KEY FINDING</b>                                                                                                                                                                                                                  | <b>Action to be taken</b>                                                                                                                                                                                                                                                                                                                                                                       | <b>PRE - Requirements</b>                                                                                                                                                                                                                                                                               | <b>Priority</b> |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1.- | <b>Public Web Assets totally decoupled from ICT governance.</b><br>Direct consequences:<br>- Myriad of solutions for same purposes, no standardization.<br>- No Identity consolidation, synchronization and federation              | Move and consolidate the infrastructure governance under ICT as well as the future development needs of this infrastructure.                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Executive Management decision</li> <li>• Business vision</li> </ul>                                                                                                                                                                                            | Very High       |
| 2.- | <b>No Data Culture</b><br>One of the biggest areas of risk.<br>UNWTO needs to improve its data classification, indexing, publishing, protection (encryption, rights management) and auditing strategies for the organizational data | Design & Implement an organization-wide data model for all UNWTO's managed data. (Enterprise Managed Data Model ) to add value to the organization as will make users more "aware" of the data they can use and how to use it.                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Executive Management decision</li> <li>• Business vision</li> <li>• Data classification, Definitions, metrics</li> <li>• Information Governance</li> <li>• Organization and Roles</li> <li>• Information Life Cycle</li> <li>• Policies, Procedures</li> </ul> | Very High       |
| 3.- | <b>No Business Intelligence or Big Data Culture</b>                                                                                                                                                                                 | <p>Deploy a central data warehouse solution that can extract data from multiple operational or departmental databases and external sources using transactional systems and present multidimensional views of data to a variety of front-end BI tools.</p> <p>Implement a reporting platform and infrastructure.</p> <p>Design and deploy a BI infrastructure that simplifies the IT burden.</p> | <ul style="list-style-type: none"> <li>• Executive Management decision</li> <li>• Business vision</li> <li>• Strategy</li> <li>• Project scope</li> <li>• Roles, Responsibilities</li> </ul>                                                                                                            | Very High       |
| 4.- | <b>No Custom Development Framework and Lifecycle</b>                                                                                                                                                                                | Implement an organization wide application infrastructure and development framework to work towards creating a more cohesive application environment, providing maximum value to the business.                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Executive Management</li> <li>• Business vision</li> <li>• Project scope</li> </ul>                                                                                                                                                                            | High            |
| 5.- | <b>Lack of Project Management &amp; Portfolio Planning Culture</b>                                                                                                                                                                  | Promote a project management culture around all the activities, initiatives and projects it                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>• Executive Management decision</li> </ul>                                                                                                                                                                                                                       | High            |

|      | KEY FINDING                                                                                 | Action to be taken                                                                                                                                                                                                                                                               | PRE - Requirements                                                                                                                                      | Priority |
|------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|      |                                                                                             | undertakes.<br>Implement an integrated solution, which is flexible and web-based approach to project management.                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Project scope</li> <li>• Strategy</li> <li>• Policies</li> </ul>                    |          |
| 6.-  | <b>No Social Computing Culture</b>                                                          | Promote social computing behavior inside UNWTO, which will help identify subject matter experts, while promoting better interactions between employees. This will impact in innovation and help retain knowledge inside the Organization.                                        | <ul style="list-style-type: none"> <li>• Executive Management decision</li> <li>• Business vision</li> <li>• Project scope</li> </ul>                   | High     |
| 7.-  | <b>Lack of true Enterprise Mobility. UNWTO needs to improve its Remote Access Services.</b> | Improve Remote Access Services and define a clear "Bring Your Own Device" strategy that will enable the majority of the Organization to be able to be more productive.                                                                                                           | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Strategy</li> <li>• Policies</li> </ul>                                             | High     |
| 8.-  | <b>Moving Commodity based IT to cloud based solutions</b>                                   | UNWTO should conduct a cost benefit analysis on Commoditizing IT services to Hybrid Cloud solutions                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Project scope</li> <li>• Strategy</li> <li>• Policies</li> </ul>                    | High     |
| 9.-  | <b>Need to change from a Device mindset to user mindset</b>                                 | UNWTO must change its focus to offer a modern approach to client platform deployment puts the user in the center as the subject to manage, instead of the device.<br>Desktop Virtualization project                                                                              | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Project scope</li> <li>• Policies</li> <li>• SLA's</li> <li>• Procedures</li> </ul> | High     |
| 10.- | <b>Need improvements on IT Processes &amp; Compliance</b>                                   | <p>Improve ICT's Services Catalog with clear definition of Service level Agreements (SLA's) and Operation Level Agreements (OLA's)</p> <p>Improve security monitoring, problem, change &amp; configuration management.</p> <p>Implement Self-service capabilities for users.</p> | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Policies</li> <li>• SLA's</li> <li>• OLA's</li> <li>• Procedures</li> </ul>         | High     |
| 11.- | <b>No Cloud culture</b>                                                                     | UNWTO needs to implement cloud culture or cloud awareness in terms of private, public and/or hybrid cloud. UNWTO should conduct a cost benefit analysis of this strategy.                                                                                                        | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Project scope</li> </ul>                                                            | Medium   |
| 12.- | <b>Architectural design based on traditional architecture principles</b>                    | The new cloud world has created newer architecture principles that UNWTO needs to be aware of with regards to Enterprise Architecture, and which will need to be reflected on and decide on whether a strategy change is in order.                                               | <ul style="list-style-type: none"> <li>• Business vision</li> <li>• Project scope</li> <li>• Strategy</li> </ul>                                        | Medium   |