

A Strategic model of the ICT Architecture

A good practice from Istat

Maria Letizia Rocchi

Italian National Institute of Statistics – Istat

Staff of the Director of Information Technology

Department for data collection and development of methods and technologies for the production and dissemination of statistical information

Istat Modernization program

- Since the second half of 2014 Istat has implemented its internal Modernization Program, in accordance with both actions supported by UNECE - High-level Group on the Modernization of Official Statistics and the European Statistical System commitment to Vision 2020
- Istat's Modernization Program was officially approved by the Governing Board on January 28th , 2016

MAIN GOALS



Increasing the supply and quality of statistical information and services for the country

Optimizing and modernizing the technological instruments to improve the efficiency and quality of production processes, in line with budget constraints.

Main steps

➤ Redesigning the Institute's organization, reducing internal fragmentation, in order to achieve:

Solid and structured Governance

Centralized Corporate Support Services (separated from production)

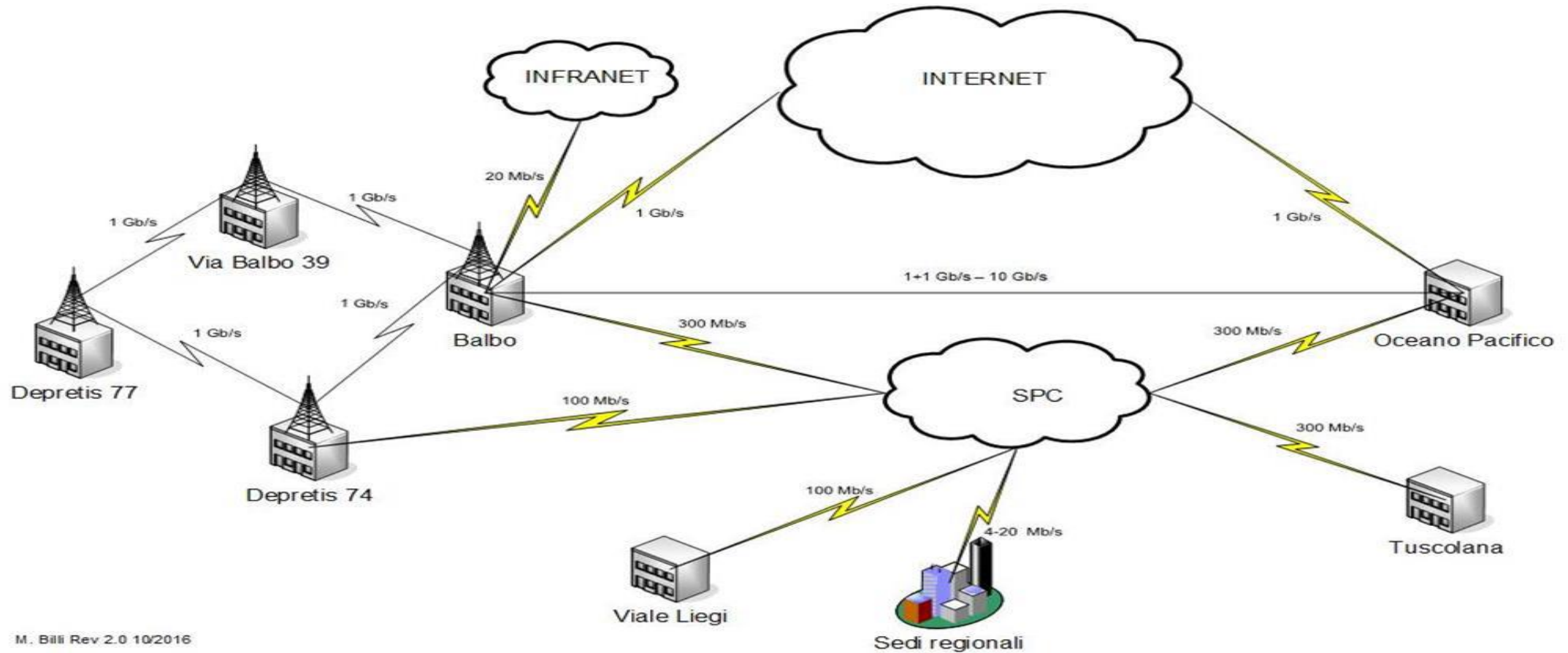
Design of production processes through the System of Registers

The consolidation of services strongly contributes to overcome the stovepipes logic, avoiding redundancies by strengthening governance and ensuring economies of scale

New organizational structure of the Institute

- the Directorate general (DGEN), with all the administrative support services (human resources, legal affairs, asset management, accounting);
- the Department for data collection and development of methods and technologies for the production and dissemination of statistical information (DIRM), which includes all the cross-cutting technical and scientific support services (methodology, information technology, data collection and dissemination);
- the Department for statistics production (DIPS), marked by its organizational modelling based on the system of statistical registers;
- the Central Directorate for strategic planning, guidance of the National Statistical System, institutional relations and international affairs (DCPS), which comprises all the functions supporting the governance action.

Overview of the actual ICT Architecture



FOUR MAIN AREAS of the ICT ARCHITECTURE

- Datacenter and network
- Server virtualization
- Data management
- Digital workplace

Today

- Datacenter and network
- Server virtualization
- Data management
- Digital workplace

two different datacenters in two different buildings;

Each component is redundant



implementation
BC and DR

Today

- Datacenter and network
- **Server virtualization**
- Data management
- Digital workplace

HYPERV and VMware technology on classic two-level storage / server

VMware technology on hyper convergent architecture in which storage and servers resources are aggregated in a single integrated hardware infrastructure.

Today

- Datacenter and network
- Server virtualization
- **Data management**
- Digital workplace

Almost all statistical production systems use Oracle Relational Database Management Systems (RDBMS) for the processing of structured data

Oracle RDBMSs use high performance servers (Oracle Exadata) to guarantee good performance and high reliability of data access and processing services, through an active - active configuration, implemented through a geographical distribution on the two Data Centers.

Today

- Datacenter and network
- Server virtualization
- Data management
- **Digital workplace**

Implementation of a Desktop-as-a-Service paradigm (DaaS) or more generally of the Virtual Desktop Infrastructure (VDI)

Contain and rationalize the administrative users to increase client security levels

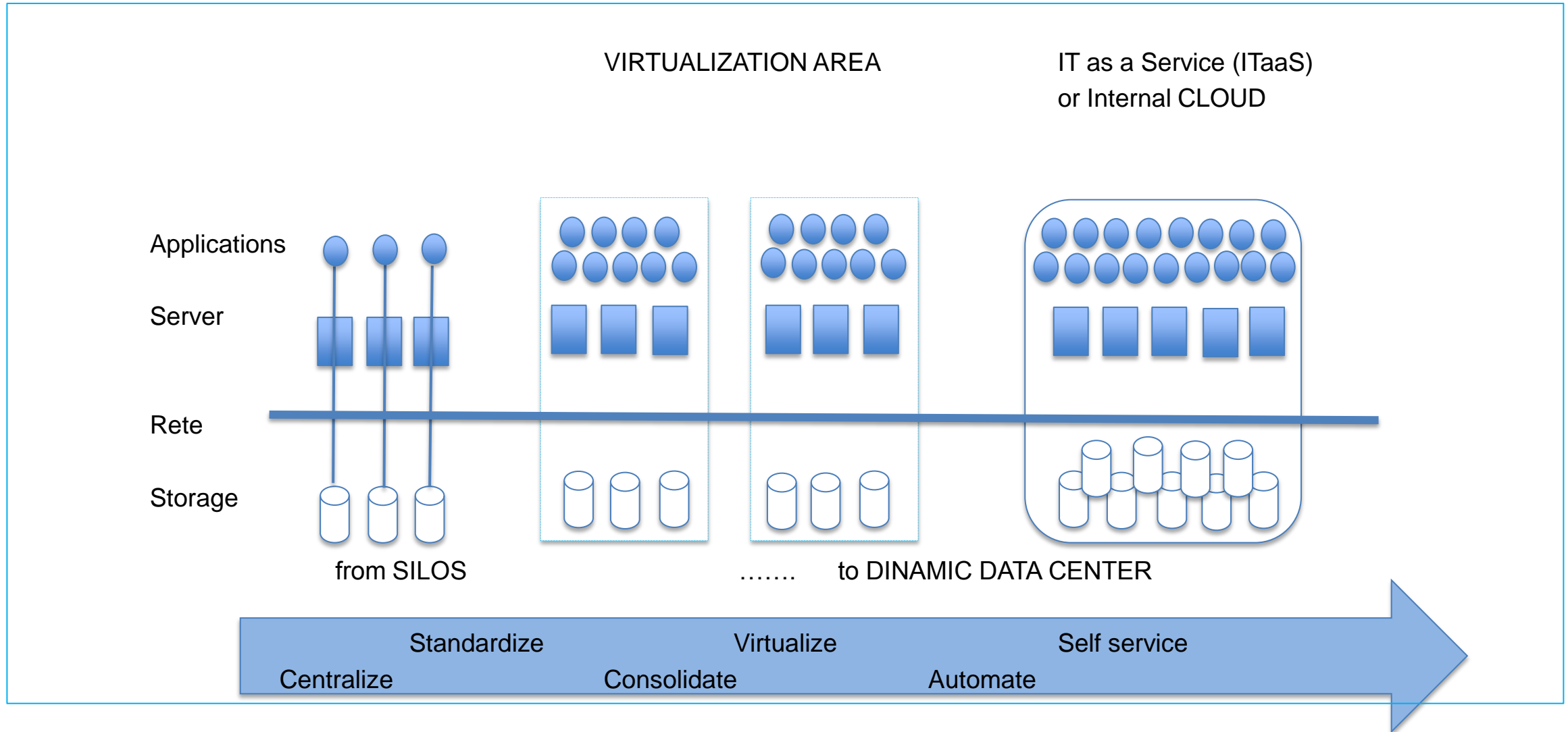
Configured the System Center Configuration Manager - SCCM, which allows installation generic programs in self-service (that are previously tested and verified from a functional and safety point of view by the technical staff, and compensates for the strong downsizing of administrative privileges on PCs).

The future of the ICT ARCHITECTURE

Create a homogeneous environment from a contractual and technological point of view

- Rationalize ICT resources
- Increase security
- Reduce the costs of technological infrastructure
- Rationalize the data center
- Adopt Cloud

Evolution to ITaaS



Public Cloud: Enterprise IT Has Competition

Rapid Time to Market

I can deploy my application in minutes.

Pay-as-you-Grow

I use and pay for just what I need, only when I need it.



One-Click Operations

I don't spend time on low-level infrastructure management.

Continuous Innovation

infrastructure gets better and faster on a regular basis.

Foundation for Enterprise Clouds



Hyperconverged Infrastructure

- ✓ Replaces enterprise SAN and NAS storage
- ✓ Powers all apps – virtual and container-based
- ✓ Scales one node at a time, with no limits

The Datacenter Needs a Reboot

Software Architecture

- Full-stack solution
- Hardware agnostic / no vertical Solutions
- Ready in minutes
- Full technology ecosystem

App-Centric Design

- Run any application at scale
- Automate workload management
- Deliver native platform services
- Decouple apps from infrastructure



Thanks for your
attention.

Maria Letizia Rocchi
DCIT – Information Technology Directorate

email: rocchi@istat.it