

Consolidation and Virtualization of Servers

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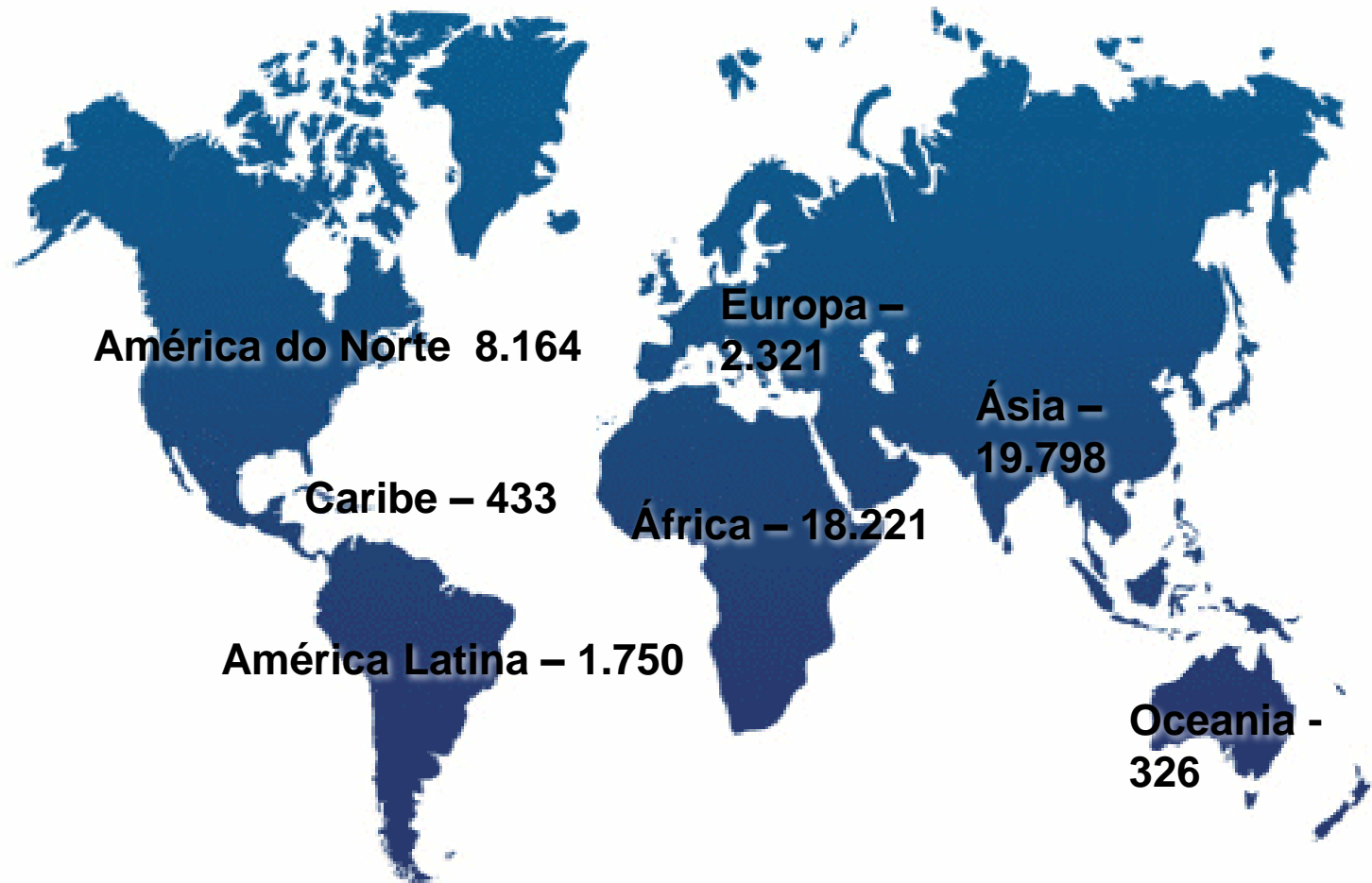
Agenda

- Credit Cooperativism
- What is Sicoob?
- Overview about the Virtualization Strategy and Servers Consolidation
- Timeline – 2007
- Difficulties and Challenges
- IT Drivers
- 2012 Perspective
- Benefits

Credit Cooperativism

- What is a Credit Cooperative?
 - It is an association of people who seek through mutual assistance, to make a better management of their financial resources.
 - The purpose of the Credit Cooperative is credit cooperation, to provide banking services to its members with more advantageous conditions.

Cooperatives around the world



Credit Cooperativism

- Credit Cooperatives in Brazil

In Brazil, Credit Cooperatives are treated in the same way as any financial institution (Law number 4595) and all operations must be authorized and regulated by the Central Bank of Brazil.

Credit Cooperatives in Brazil

05
National Confederations

38
Central Cooperatives

1.273
Singular Cooperatives

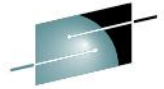
02
Cooperative Banks



4.825
Service points

56.178
Direct jobs

5,8 Milhões
Customers



SHARE
Technology - Connections - Results

Sicoob



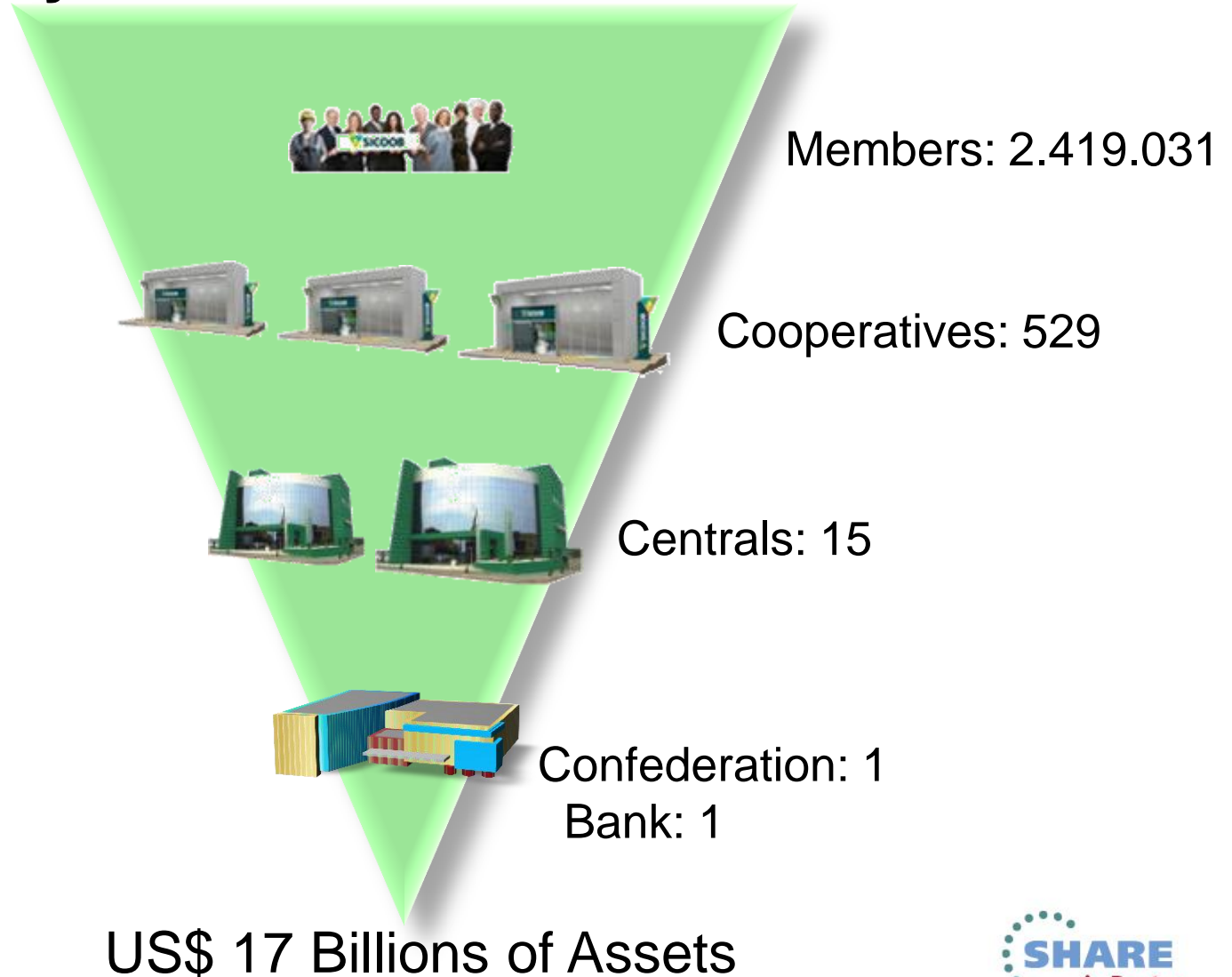
Sicoob

LOGGIA
SICOOB
PAÍS DA UNIÃO
LOC. PORTUGUÊS
LET. INGLÊS
25.11.2012
3' 44"

Area VFX
Rua Cunha Gago, 700 - 4º andar - São Paulo - SP
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www.areavfx.com



Sicoob X-Ray



Products Offered by Sicoob

Payments
Wire Transfer

Private
Pension

Investments

Capital
Account

Official
Resources

Insurance

Loans

Consortium

Cash
Account

Debit and
Credit Cards

Personalized
Service



Major Banks in Brazil – Points of Service

Ranking	Institution	Number
1º	Banco do Brasil	6.910
2º	Bradesco	6.025
3º	Itaú Unibanco	4.721
4º	Santander ¹	3.942
5º	Caixa Econômica Federal	3.054
6º	Sicoob	2.013
7º	HSBC	1.268

Overview of Sicoob's IT Infrastructure

- Primary Site



- 2 Mainframes z196
- 2 Storages DS8700
- 1 Tape Library TS3500
- 5 High-End Intel Servers
- 17 Middle Range Servers
- 4 Directors SAN

- Secondary Site



- 2 Storages DS8700
- 1 Tape Library iScalar
- 1 High-End Intel Servers
- 3 Middle Range Servers
- 4 Directors SAN

All systems and platforms that compose the major bank core systems are developed In-house.



The strategy of Consolidation and Virtualization of Sicoob's computing infrastructure brought the necessary dynamism, flexibility and scalability to be inserted in the scenario of high-tech companies. The outcome of it , was a new and agile technological infrastructure flexible enough to meet the needs of businesses as it leverages new opportunities.



Other technical benefits:

- Maintenance cost reduction;
- Licensing cost reduction;
- Power consumption reduction;
- Data Center´s footprint and computational resources optimization;
- Ability of moving logical systems between servers and sites ensuring a high availability and disaster recovery strategy;



The main point of Sicoob strategy

One of the socio-environmental initiatives at SICOOB is reducing carbon emissions in order to contribute to a more sustainable environment. This action involves a conscious use of computational resources while optimize its use to meet business demands.

Timeline - 2007

210 blade servers
+ 90 rack servers
(300 servers)



middle-range servers
(8 servers)



2 itanium servers
(2 servers)



Total CPU – 1056 cores
Average consumption (CPU and Memory): 90%

Total power consumption – 259 KWh
Total heat dissipation – 883.961 BTUh

Total monthly cost: US\$ 50.349,60

Difficulties and Challenges

- Granularity of hardware and programming languages;
- Delivery model based on Metaframe technology;
- In-house system underperforming;
- Lack of strategic direction and executive support;
- Low maturity of virtualization-based solutions, including performance optimization and support levels;
- Depreciated and unprepared technology for virtualization.

IT Directions

- IT GUIDELINES

- Establishment of Committees and Political Groups;

- Technological guideline:

- Secure, available and updated solutions;

- Focus on business growth;

- Products and services monitoring;

- Quality control;

- Automation;

- Saving in licensing;

- Social and environmental responsibilities.

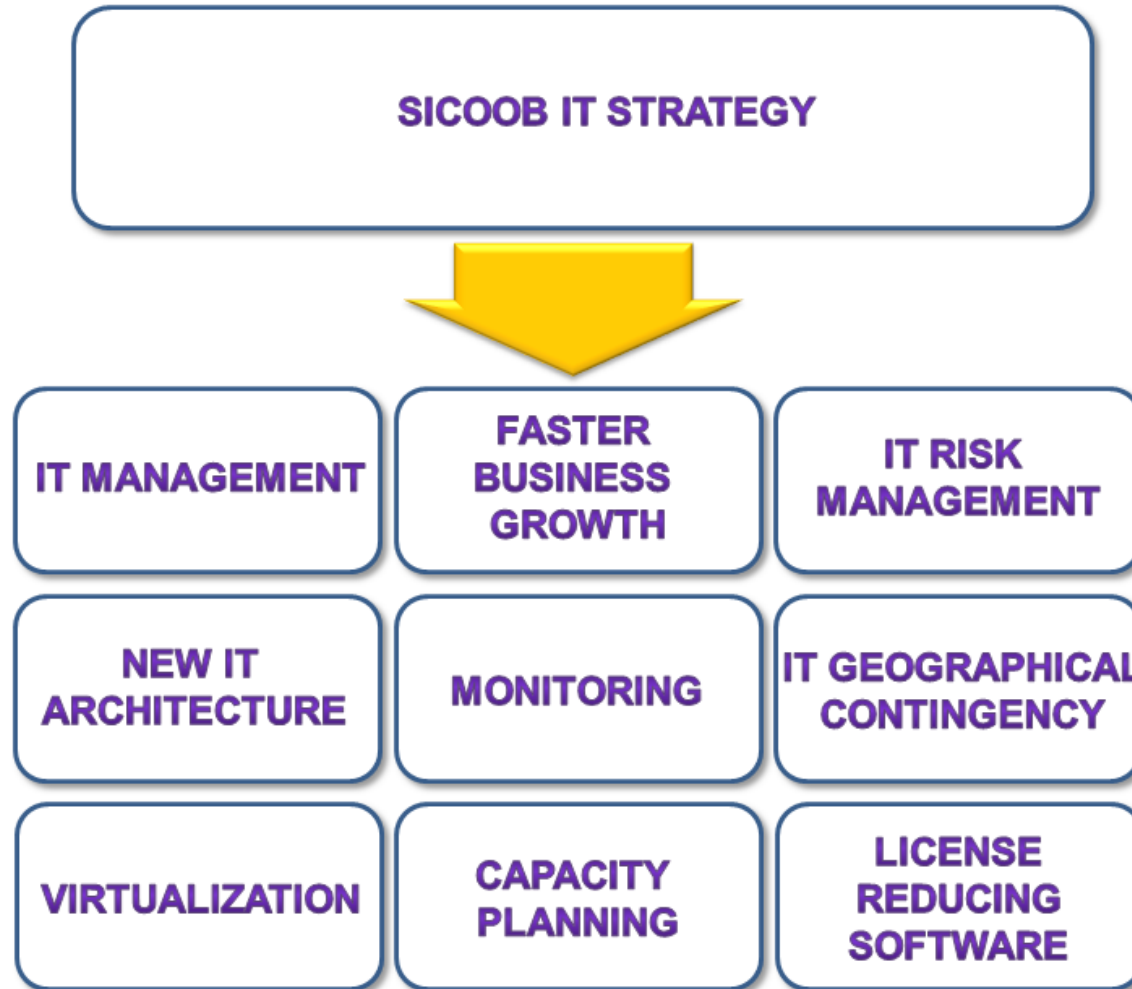
- IT Strategic and Operational Planning;

- IT Process Control;

- Mapping and automating strategic and operational processes.



New IT Directions



New Processing Platform Replacement Proposal

300 entry level servers



8 middle-range servers



2 Itanium servers



4 high end servers



20 middle-range servers



mainframes



2012 Perspective – Resources Utilization

78 blades +
12 middle-range
(90 servers)

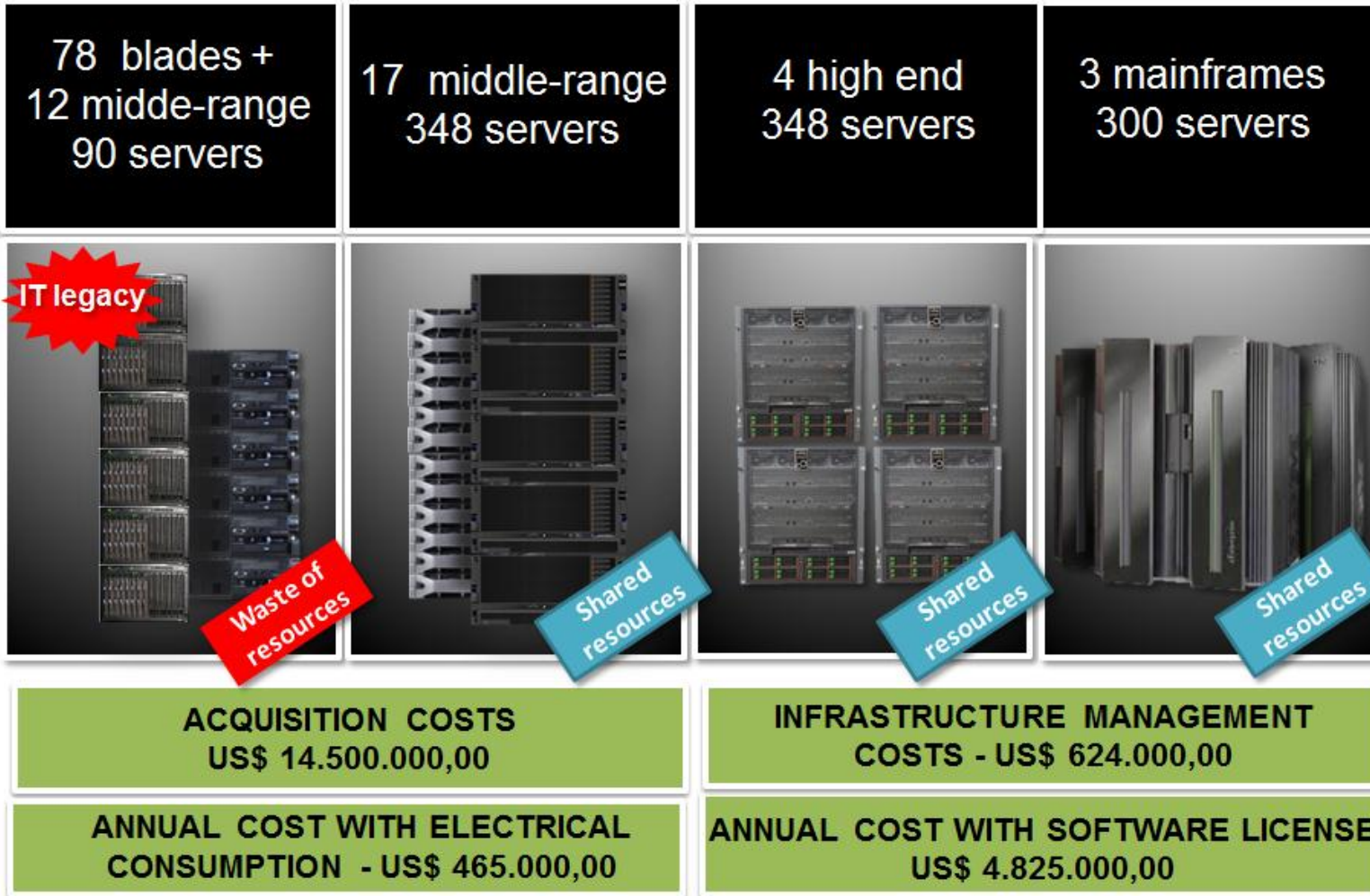
17 middle-range
(348 servers)

4 high end
(64 servers)

3 mainframes
(300 servers)



2012 Perspective – Resources Utilization



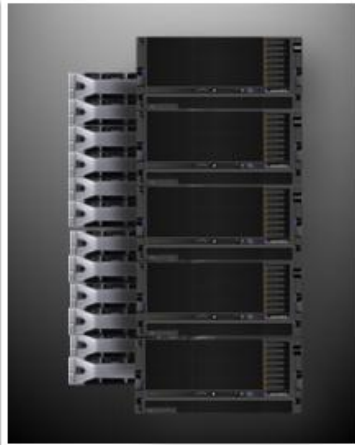
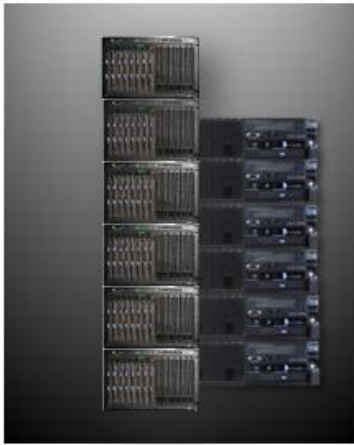
2012 Perspective – Power Consumption and Heat Dissipation

78 blades +
12 middle-range
90 servers

17 middle-range
348 servers

4 high end
64 servers

3 mainframes
346 servers



Monthly Cost:
US\$ 12.130,65

Monthly Cost:
US\$ 16.329,60

Monthly Cost:
US\$ 6.220,80

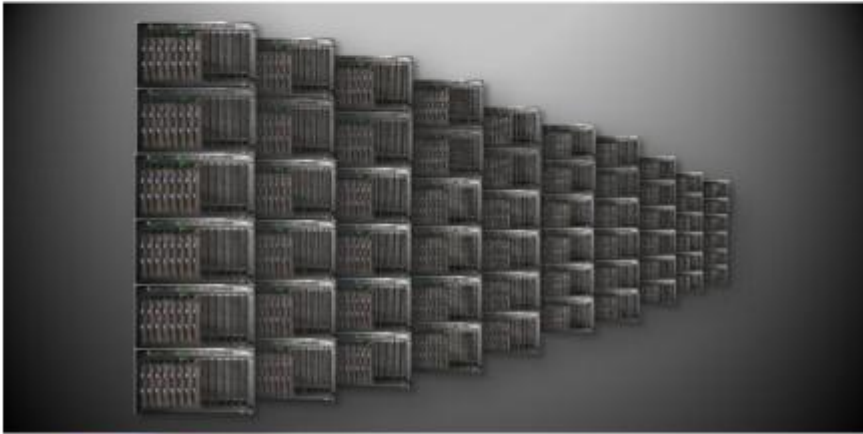
Monthly Cost:
US\$ 7.387,20

Monthly power consumption cost
US\$ 38.840,00

Scenario without Technological guideline – 2012 Perspective

893 blades
893 servers

34 middle servers
17 servers

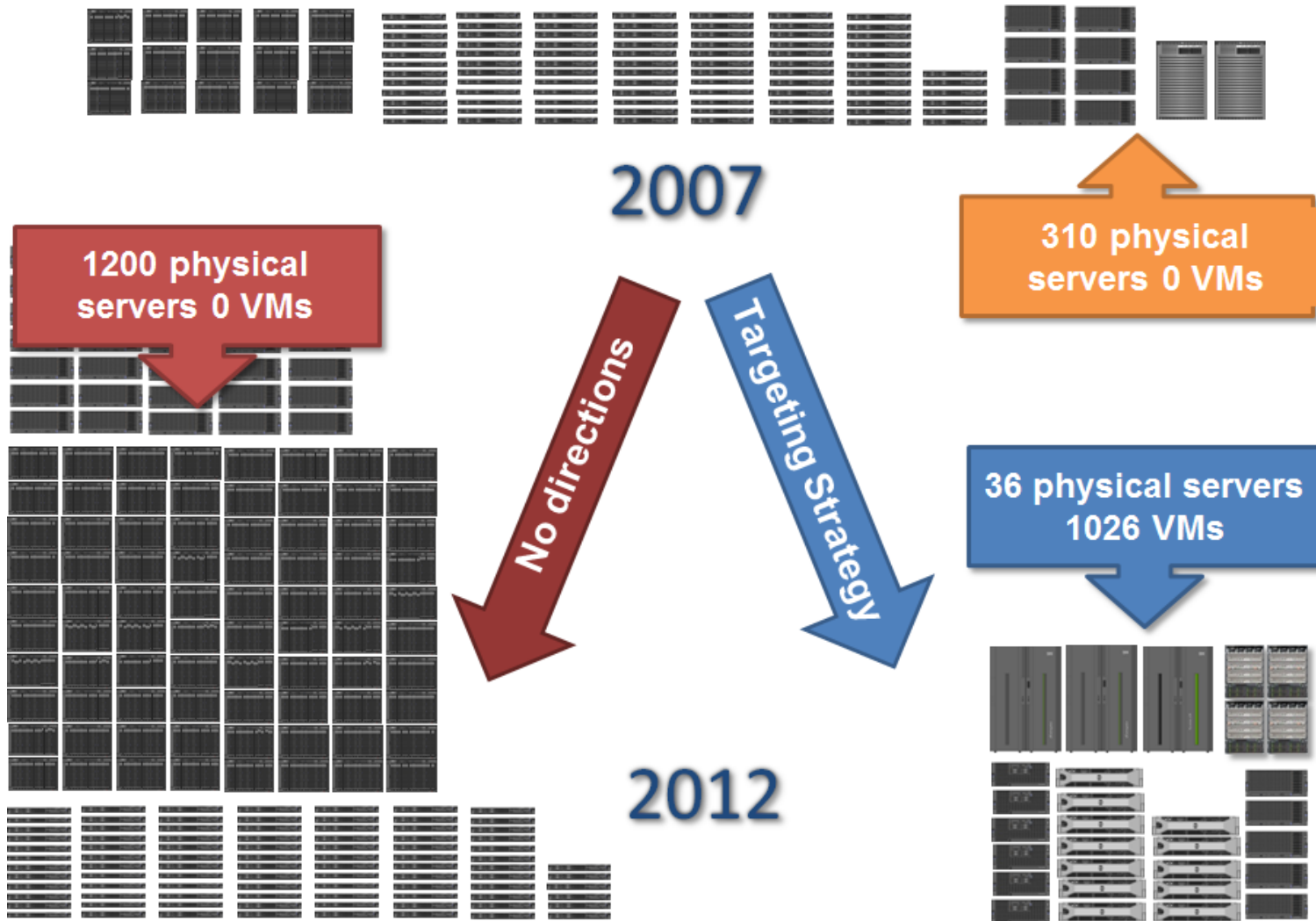


Total monthly cost US\$ 180.208,80

- ↑ High cost of power consumption
- ↑ High cost of software licensing
- ↑ High cost manageability

- ↑ Reduction of Data Center space
- ↑ Low resilience, availability and scalability
- ↑ Increased costs with network assets / security

Strategic Comparison



Financial Comparison

Costs	Current Scenario	Without Virtualization Scenario	Total
Acquisition	US\$ 14.500.000,00	US\$ 7.600.000,00	+ 90%
Licensing	US\$ 4.825.000,00	US\$ 6.776.000,00	- 40%
Power Consumption	US\$ 465.000,00	US\$ 2.425.000,00	- 420%
Management	US\$ 625.000,00	US\$ 1.250.000,00	- 100%
Additional Cost	-	US\$ 4.100.000,00	-

Acquisition Cost Differential	Annual Costs Differential
- US\$ 2.800.000,00	+ US\$ 4.411.000,00
Total: + US\$ 1.611.000,00	

Benefits

- Power consumption reduction
- Licensing costs reduction
- Reduction of administrative overhead
- Flexibility and Scalability
- High availability (lead to geographical contingency)
- Provided standardization of infrastructure
- Easy system's management (legacy environments)
- Reduced administration and maintenance support
- Reuse of resources (more efficient use of hardware)
- Disaster Recovery
- Easier administration and implementation of infrastructure capacity planning
- Readiness for an IT industrial environment – Private cloud

Statistics

Power consumption saved per year

US\$ 1.696.425,60





Sustainability



When the Sicoob's equipments **were replaced**,
6.134.400 Kw/year of power **was saved** and **270**
tons of CO₂/year **were not sent** into the atmosphere

This represents

▶ Power Consumption of **273** houses/year



▶ **1.875** trees/year to replant



▶ **80** Cars emitting CO₂ /year



Thank You!

We are delivering in the present and constructing the future
of our cooperatives!

