

# ROI TCO Analysis

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# Information

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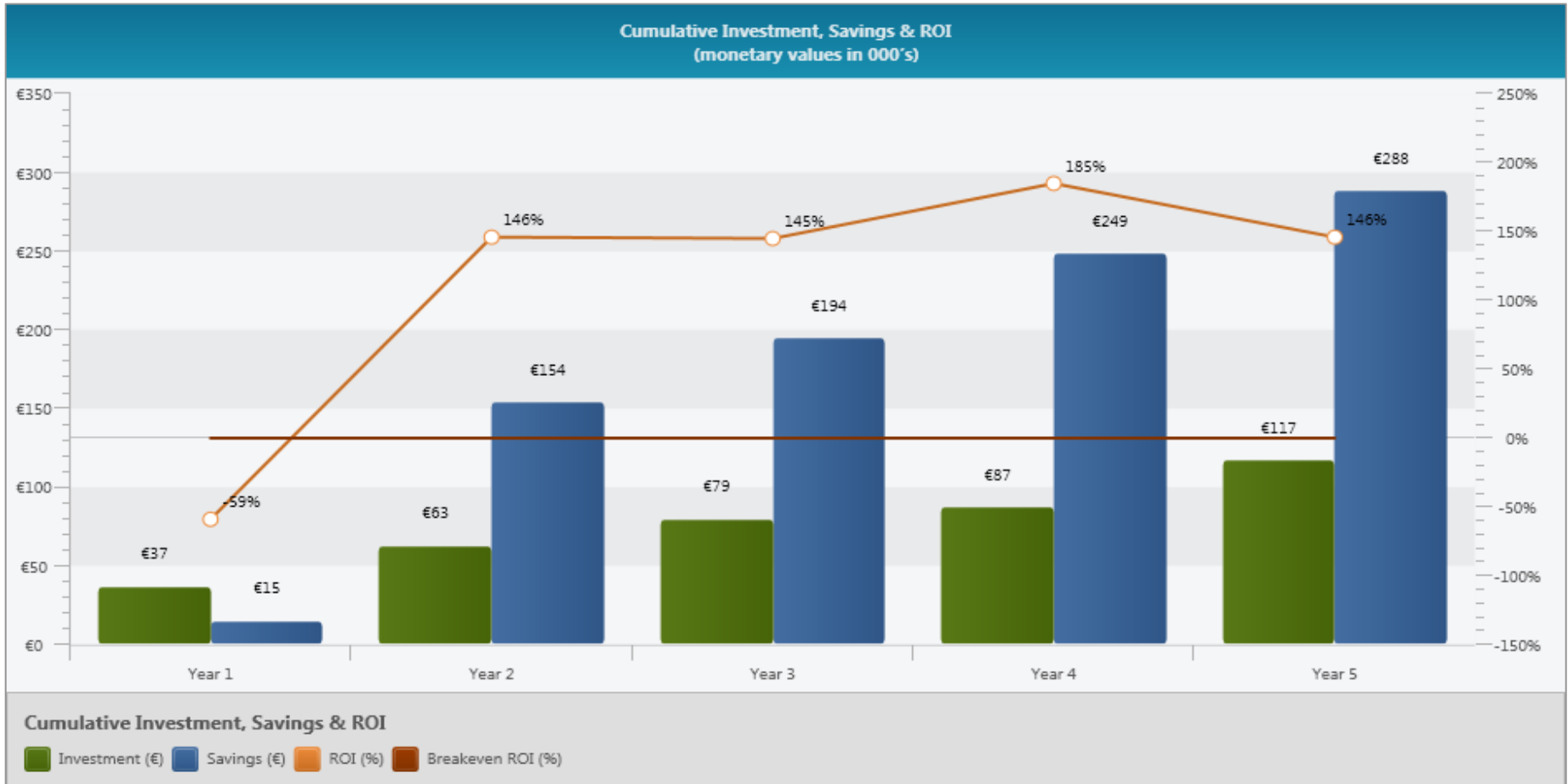
This ROI TCO analysis is only simulation of possible situation.

The analysis was prepared by Ictlogic, s.r.o.

For details, you can contact us at [info@ictlogic.cz](mailto:info@ictlogic.cz) or you can visit <http://www.ictlogic.eu>.

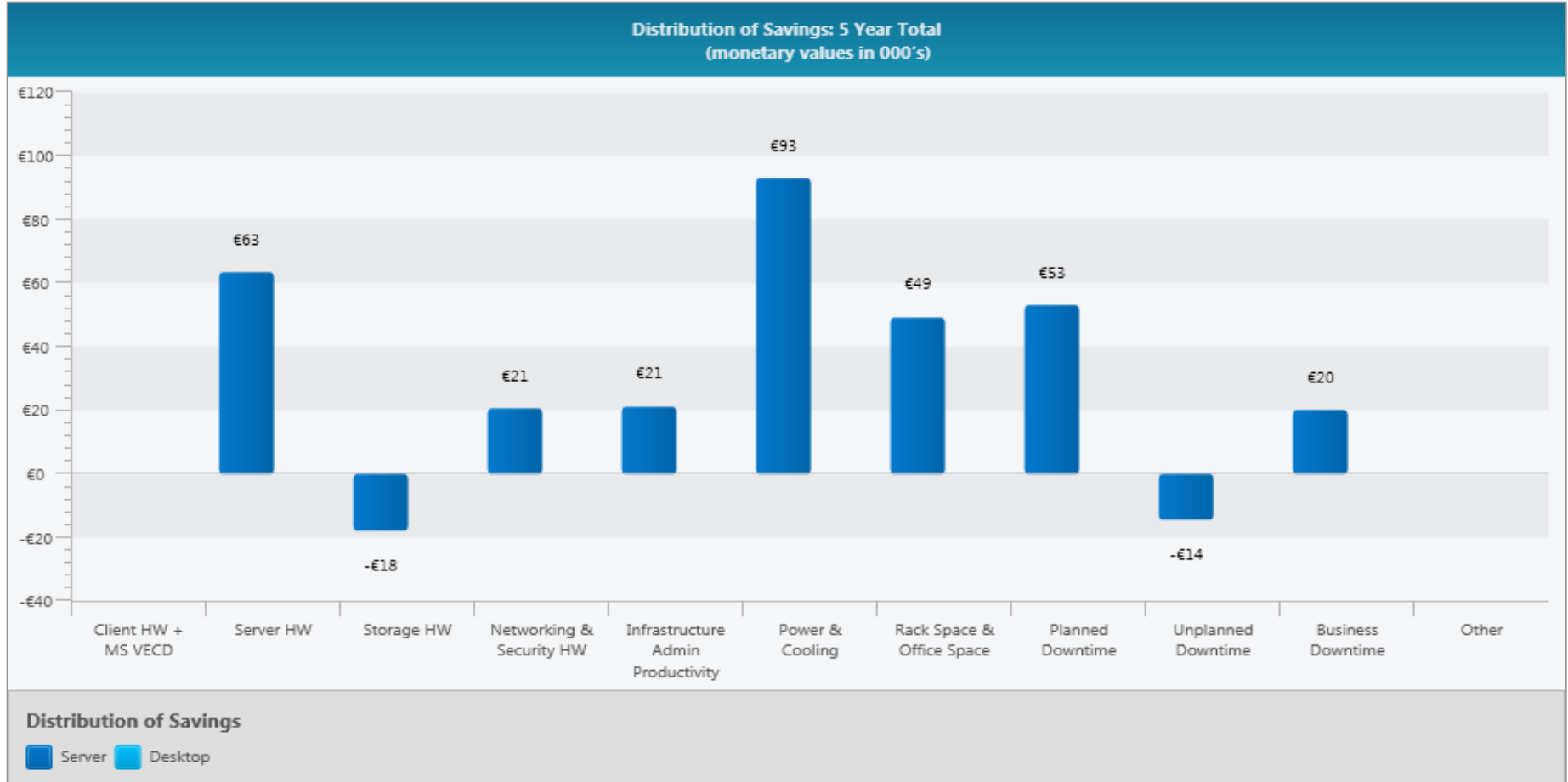


# Cumulative Investment, Savings & ROI



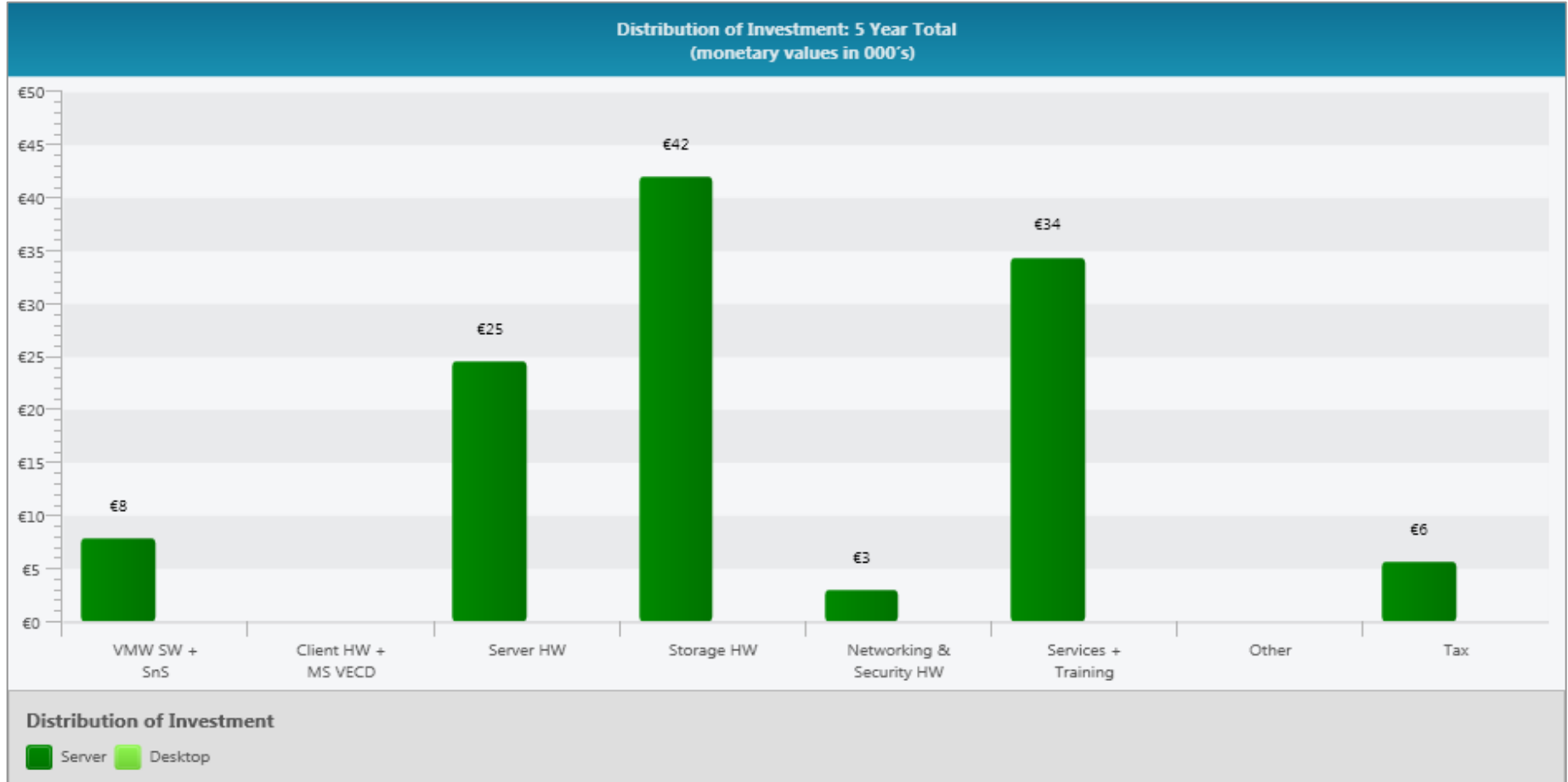
# Distribution of Savings : 5 Year Total

Total Savings: € €288,258



# Distribution of Investment : 5 Year Total

Total Investment: € €117,204



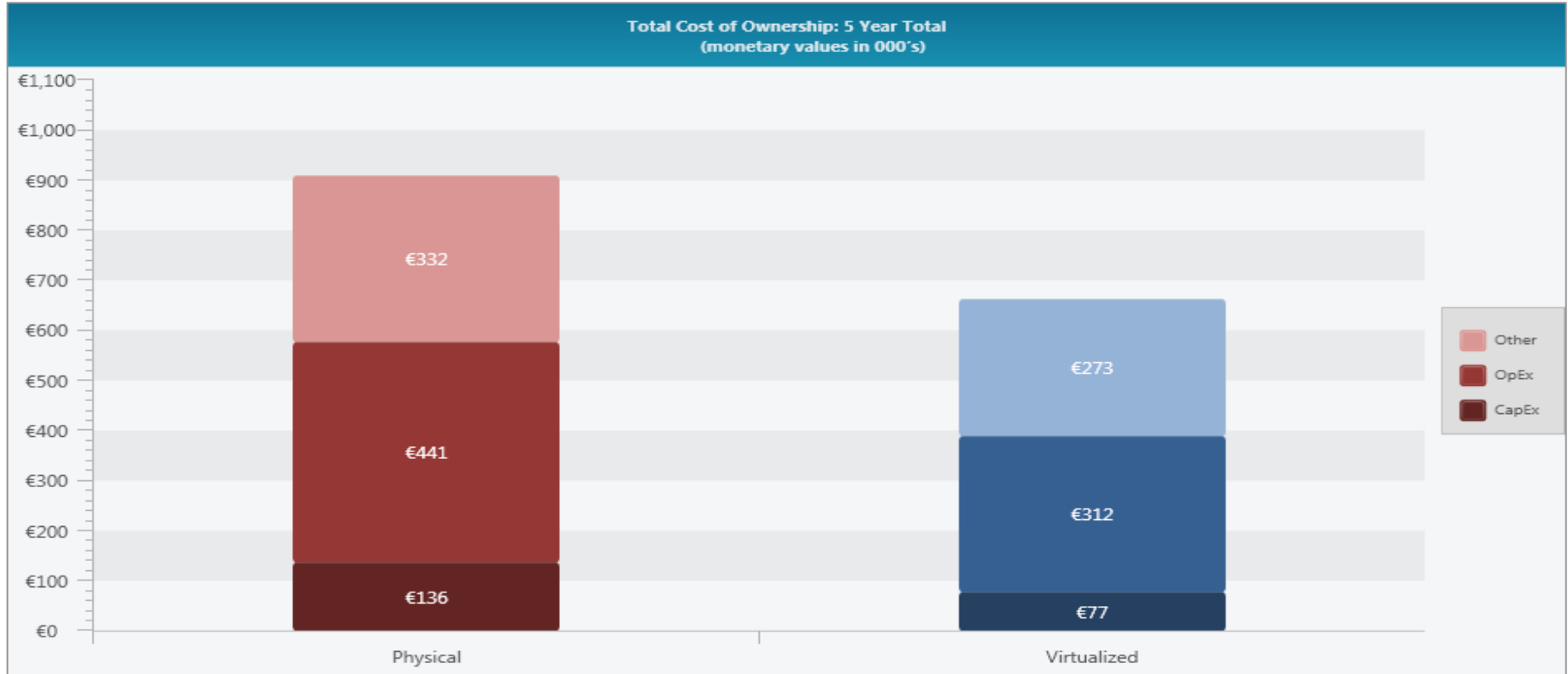
# Total Cost of Ownership Detail : 5 Year Total

Physical Total: € €909,469

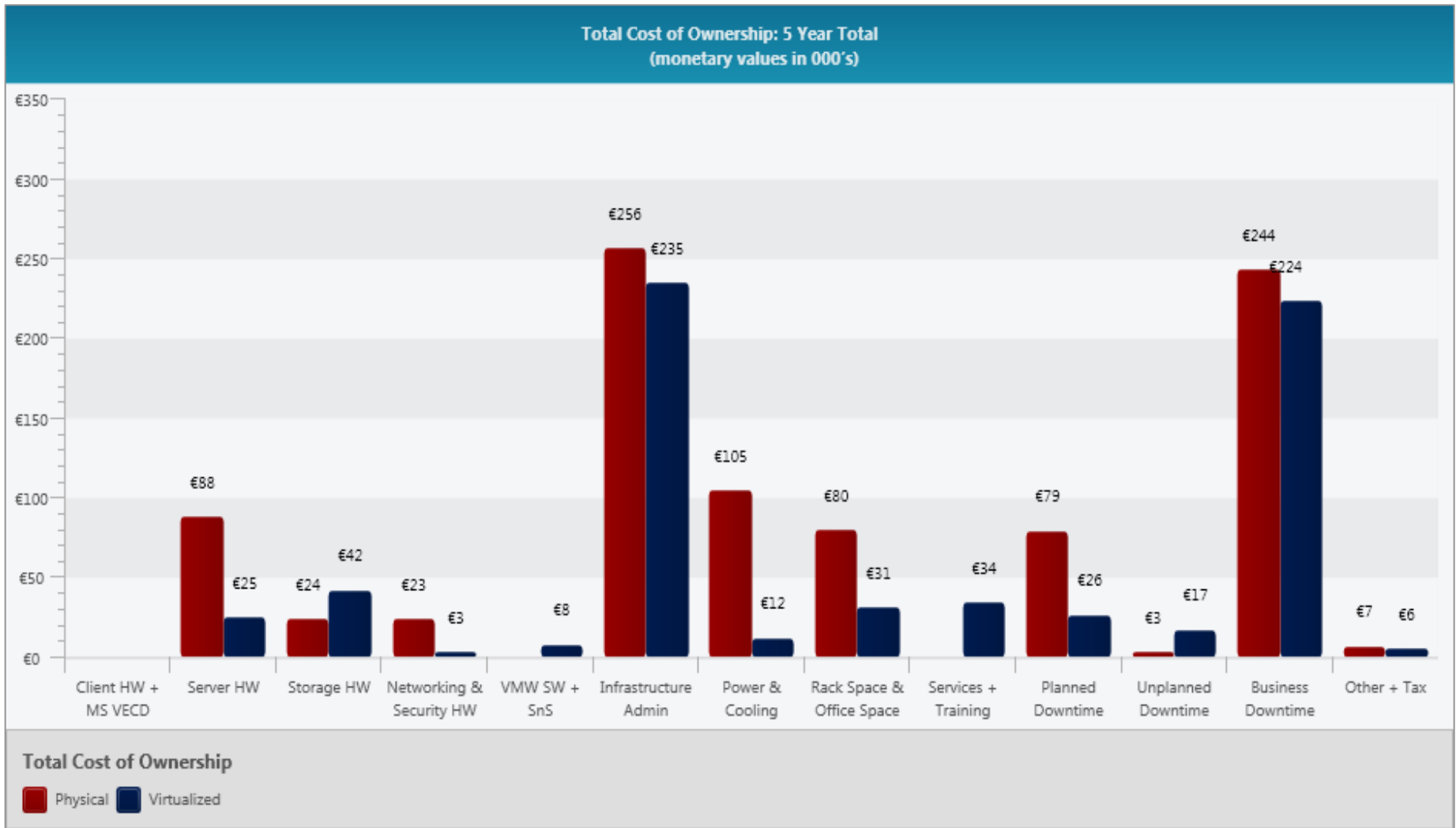
Virtualized Total:

€ €662,214

27% Reduction

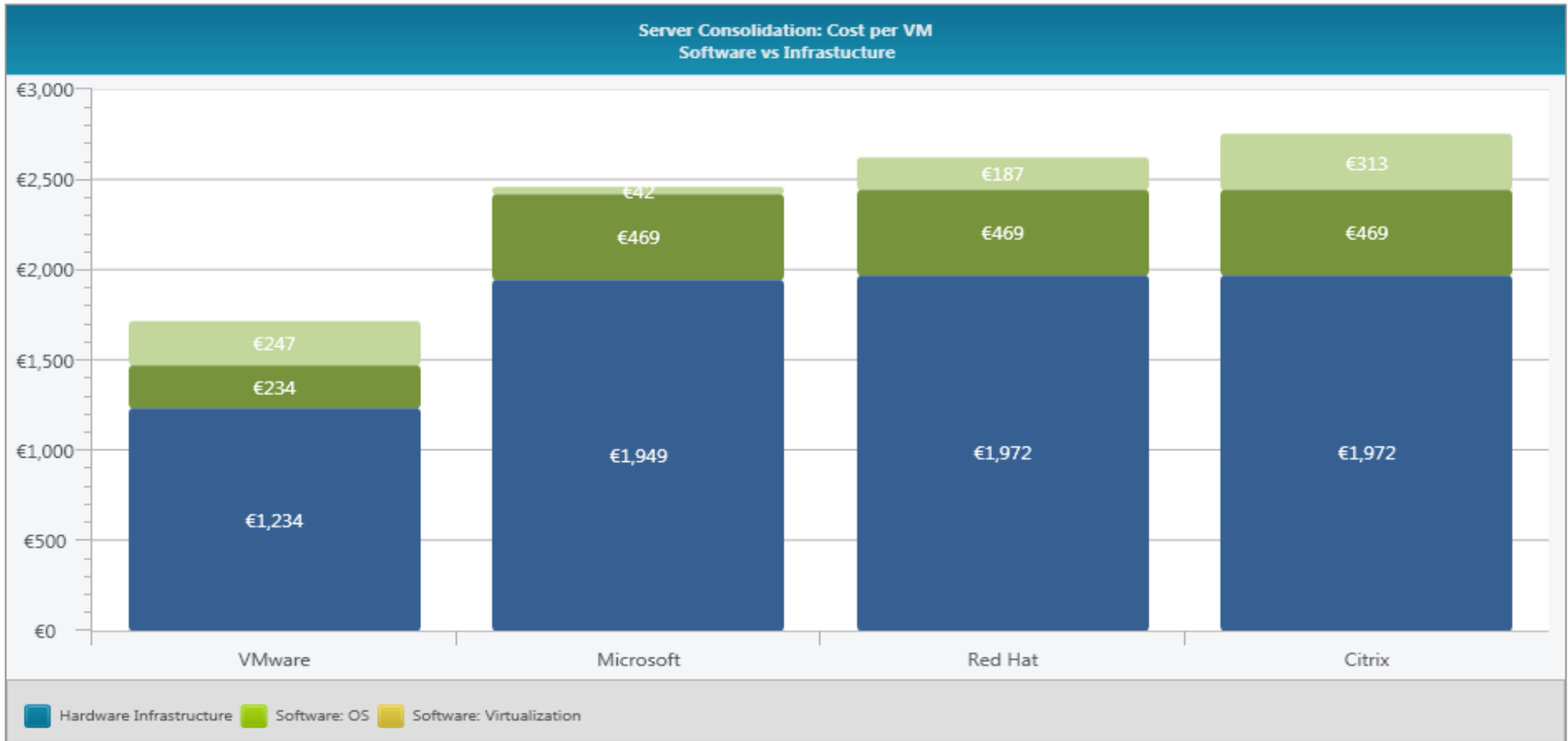


# Total Cost of Ownership : 5 Year Total

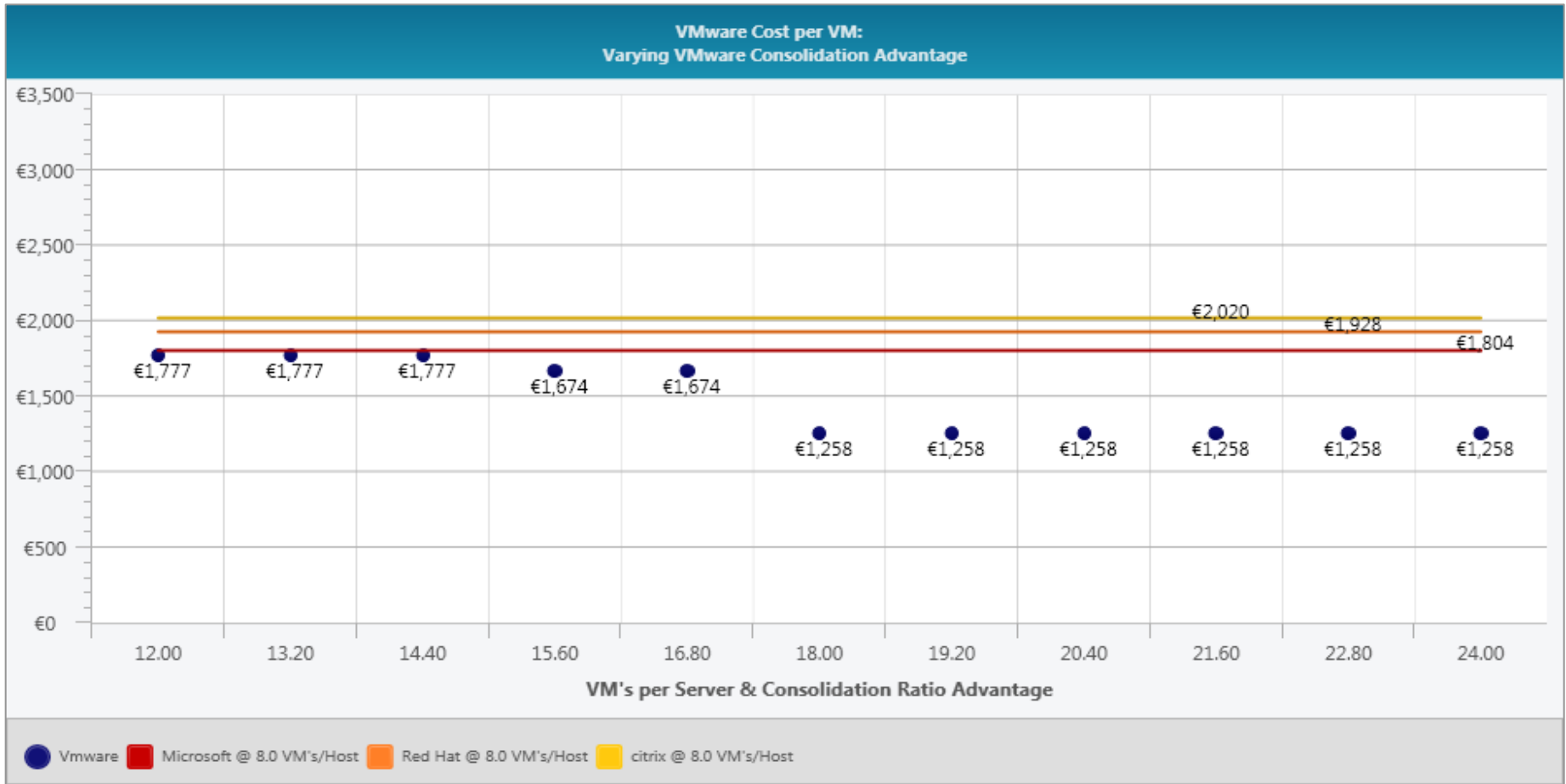




# Server Consolidation: Cost per VM



# VMware Cost per VM: Varying VMware Consolidation Advantage



# Summary of Virtualized Infrastructure Environment - Workloads

| Server Infrastructure                                | Year 1    | Year 2    | Year 3    | Year 4    | Year 5    |
|--|-----------|-----------|-----------|-----------|-----------|
| <b><u>Unvirtualized Workloads</u></b>                |           |           |           |           |           |
| Extension of Existing                                | 32        | 34        | 36        | 38        | 40        |
| % Virtualized  | 100%      | 100%      | 100%      | 100%      | 100%      |
| <u>VM's: Dev &amp; Test + Production</u>             |           |           |           |           |           |
| <b>Total(Includes vCenter Server instances)</b>      | <b>34</b> | <b>36</b> | <b>38</b> | <b>40</b> | <b>42</b> |
| <u>VM's: Business Continuity + Disaster Recovery</u> |           |           |           |           |           |
| <b>Total</b>   | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  |
| <u>VM's: Network Security</u>                        |           |           |           |           |           |
| <b>Total</b>   | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  |

# Summary of Virtualized Infrastructure Environment - Servers

| Server Infrastructure                          | Year 1   | Year 2   | Year 3   | Year 4   | Year 5   |
|--|----------|----------|----------|----------|----------|
| <u>Dev &amp; Test + Production</u>             |          |          |          |          |          |
| <b>Total</b>                                   | <b>2</b> | <b>2</b> | <b>3</b> | <b>3</b> | <b>3</b> |
| Consolidation (VM's to Servers)                | 17:1     | 18:1     | 13:1     | 13:1     | 14:1     |
| <u>Business Continuity + Disaster Recovery</u> |          |          |          |          |          |
| <b>Total</b>                                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <u>Network Security</u>                        |          |          |          |          |          |
| <b>Total</b>                                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

# Summary of Virtualized Infrastructure Environment - Storage

| Server Infrastructure | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-----------------------|--------|--------|--------|--------|--------|
| Total (GB's)          | 3,825  | 4,050  | 4,275  | 4,500  | 4,725  |

# Summary of Virtualized Infrastructure Environment – Infrastructure Admin (Hours)

| Server Infrastructure | Year 1       | Year 2       | Year 3       | Year 4       | Year 5       |
|-----------------------|--------------|--------------|--------------|--------------|--------------|
| <b>Unvirtualized</b>  |              |              |              |              |              |
| Workloads             | 32           | 34           | 36           | 38           | 40           |
| Administrators (FTE)  | 0.7          | 0.9          | 0.8          | 0.9          | 0.9          |
| <b>Hours</b>          | <b>1,414</b> | <b>1,801</b> | <b>1,588</b> | <b>1,675</b> | <b>1,782</b> |

# Summary of Virtualized Infrastructure Environment – Infrastructure Admin (Hours) (Contd.)

| Server Infrastructure         | Year 1       | Year 2       | Year 3       | Year 4       | Year 5       |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| <b>Virtualization Savings</b> |              |              |              |              |              |
| +vSphere                      | 3            | -386         | -84          | -103         | -112         |
| +AppSpeed                     | 0            | 0            | 0            | 0            | 0            |
| +vCloud Director              | 0            | 0            | 0            | 0            | 0            |
| +SRM                          | 0            | 0            | 0            | 0            | 0            |
| +vShield Edge & App           | 0            | 0            | 0            | 0            | 0            |
| <b>Savings</b>                | <b>3</b>     | <b>-386</b>  | <b>-84</b>   | <b>-103</b>  | <b>-112</b>  |
| <b>Total</b>                  | <b>1,417</b> | <b>1,415</b> | <b>1,504</b> | <b>1,572</b> | <b>1,670</b> |
| Reduction                     | 0%           | 21%          | 5%           | 6%           | 6%           |

# Virtualized Infrastructure Green Savings – Number of Servers & Network Security Appliances

| Energy Savings                                  | Over 3 Years | Over 5 Years |
|---|--------------|--------------|
| <u>Extension of Unvirtualized Environment</u>   |              |              |
| Dev & Test + Production                         | 36           | 40           |
| Business Continuity + Disaster Recovery         | 0            | 0            |
| Network Security appliances                     | 0            | 0            |
| <b>Total</b>                                    | <b>36</b>    | <b>40</b>    |
| <u>Transition to Virtualized Infrastructure</u> |              |              |
| Dev & Test + Production                         | 3            | 3            |
| Business Continuity + Disaster Recovery         | 0            | 0            |
| Network Security hosts                          | 0            | 0            |
| Desktop Hosts                                   | 0            | 0            |
| <b>Total</b>                                    | <b>3</b>     | <b>3</b>     |
| <b>Reduction</b>                                | <b>-33</b>   | <b>-37</b>   |



# Virtualized Infrastructure Green Savings – Power & Cooling

| Energy Savings  | Over 3 Years    | Over 5 Years      |
|---|-----------------|-------------------|
| <b>Power and Cooling Energy Savings (Kilo-Watt Hours)</b> |                 |                   |
| Extension of Unvirtualized Environment                    | 768,550         | 1,356,264         |
| Transition to Virtualized Infrastructure                  | 115,764         | 184,066           |
| Reduction   | -652,785        | -1,172,198        |
| Net impact of Desktop Client transition                   | 0               | 0                 |
| <b>Reduction</b>  | <b>-652,785</b> | <b>-1,172,198</b> |

# Virtualized Infrastructure Green Savings - Environment Impact

| Energy Savings   | Over 3 Years | Over 5 Years |
|--|--------------|--------------|
| Planting Trees (Assumes 444 lbs of CO2 offset per tree)      | 1,972        | 3,542        |
| Cars off the Road (Assumes 12,000 miles per year and 20 mpg) | 70           | 126          |
| <u>CO2 Emissions (Assumes 1.341 lbs of CO2 per kWh))</u>     |              |              |
| in lbs   | 875,385      | 1,571,918    |
| in kg  | 397,075      | 713,022      |

# Cumulative Investment, Savings & ROI

|  | Year 1  | Year 2   | Year 3   | Year 4   | Year 5   |
|--|---------|----------|----------|----------|----------|
| <b>Investment vs. Savings vs. ROI (cumulative)</b> |         |          |          |          |          |
| Investment (€)                                     | €36,599 | €62,538  | €79,462  | €87,261  | €117,203 |
| Savings (€)  | €14,866 | €154,076 | €194,443 | €248,653 | €288,258 |
| ROI (%)  | (59%)   | 146%     | 145%     | 185%     | 146%     |
| Breakeven ROI (0%)                                 | 0%      | 0%       | 0%       | 0%       | 0%       |
|  |         |          |          |          |          |
| Annual Savings                                     | €14,866 | €139,210 | €40,368  | €54,210  | €39,605  |
| 3 Year Payback                                     | NA      | 1.5      | NA       | NA       | NA       |
| 5 Year Payback                                     | NA      | 1.7      | NA       | NA       | NA       |
|  |         |          |          |          |          |

# Distribution of Savings

|       |                                   |          | Total 5 Yrs |          |
|-------|-----------------------------------|----------|-------------|----------|
|       |                                   | Server   | Desktop     | Total    |
| CapEx | Client HW + MS VECD               | €0       | €0          | €0       |
|       | Server HW                         | €63,410  | €0          | €63,410  |
|       | Storage HW                        | -€17,771 | €0          | -€17,771 |
|       | Networking & Security HW          | €20,541  | €0          | €20,541  |
| OpEx  | Infrastructure Admin Productivity | €21,168  | €0          | €21,168  |
|       | Power & Cooling                   | €93,013  | €0          | €93,013  |
|       | Rack Space & Office Space         | €49,298  | €0          | €49,298  |
| Other | Planned Downtime                  | €52,819  | €0          | €52,819  |
|       | Unplanned Downtime                | -€14,232 | €0          | -€14,232 |
|       | Business Downtime                 | €20,013  | €0          | €20,013  |
|       | Other                             | €0       | €0          | €0       |

# Distribution of Investment

|            |                          | Total 5 Yrs     |           |                 |
|------------|--------------------------|-----------------|-----------|-----------------|
|            |                          | Server          | Desktop   | Total           |
| Investment | VMW SW + SnS             | €7,814          | €0        | €7,814          |
|            | Client HW + MS VECD      | €0              | €0        | €0              |
|            | Server HW                | €24,524         | €0        | €24,524         |
|            | Storage HW               | €41,962         | €0        | €41,962         |
|            | Networking & Security HW | €2,934          | €0        | €2,934          |
|            | Services + Training      | €34,388         | €0        | €34,388         |
|            | Other                    | €0              | €0        | €0              |
|            | Tax                      | €5,581          | €0        | €5,581          |
|            | <b>Total</b>             | <b>€117,203</b> | <b>€0</b> | <b>€117,203</b> |

# Total Cost of Ownership

|       |              |                 | Total 5 Yrs     |             |
|-------|--------------|-----------------|-----------------|-------------|
|       |              | Physical        | Virtualized     | % Reduction |
| CapEx |              | €135,599        | €77,235         | 43%         |
| OpEx  |              | €441,371        | €312,280        | 29%         |
| Other |              | €332,498        | €272,700        | 18%         |
|       | <b>Total</b> | <b>€909,469</b> | <b>€662,214</b> | <b>27%</b>  |

# Total Cost of Ownership - 5 Year Total

|       |                           | Physical         |           |                 | Virtualized     |           |                 | % Reducti on |           |            |
|-------|---------------------------|------------------|-----------|-----------------|-----------------|-----------|-----------------|--------------|-----------|------------|
|       |                           | Server           | Desktop   | Total           | Server          | Desktop   | Total           | Server       | Desktop   | Total      |
| CapEx | Client HW + MS VECD/VDA   | €0               | €0        | €0              | €0              | €0        | €0              | 0%           | 0%        | 0%         |
|       | Server HW                 | €87,934          | €0        | €87,934         | €24,524         | €0        | €24,524         | 72%          | 0%        | 72%        |
|       | Storage HW                | €24,190          | €0        | €24,190         | €41,962         | €0        | €41,962         | (73%)        | 0%        | (73%)      |
|       | Networking & Security HW  | €23,475          | €0        | €23,475         | €2,934          | €0        | €2,934          | 88%          | 0%        | 88%        |
|       | VMW SW + SnS              | €0               | €0        | €0              | €7,814          | €0        | €7,814          | 0%           | 0%        | 0%         |
| OpEx  | Infrastructure Admin      | €256,379         | €0        | €256,379        | €235,211        | €0        | €235,211        | 8%           | 0%        | 8%         |
|       | Power & Cooling           | €104,883         | €0        | €104,883        | €11,870         | €0        | €11,870         | 89%          | 0%        | 89%        |
|       | Rack Space & Office Space | €80,109          | €0        | €80,109         | €30,811         | €0        | €30,811         | 62%          | 0%        | 62%        |
|       | Services + Training       | €0               | €0        | €0              | €34,388         | €0        | €34,388         | 0%           | 0%        | 0%         |
|       | Other                     | Planned Downtime | €79,229   | €0              | €79,229         | €26,410   | €0              | €26,410      | 67%       | 0%         |
|       | Unplanned Downtime        | €2,934           | €0        | €2,934          | €17,166         | €0        | €17,166         | (485%)       | 0%        | (485%)     |
|       | Business Downtime         | €243,555         | €0        | €243,555        | €223,543        | €0        | €223,543        | 8%           | 0%        | 8%         |
|       | Other + Tax               | €6,780           | €0        | €6,780          | €5,581          | €0        | €5,581          | 18%          | 0%        | 18%        |
|       | <b>Total</b>              | <b>€909,469</b>  | <b>€0</b> | <b>€909,469</b> | <b>€662,214</b> | <b>€0</b> | <b>€662,214</b> | <b>27%</b>   | <b>0%</b> | <b>27%</b> |

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# ICTLOGIC

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