Software Licensing and Asset Management Approaches for TBM

Carl Stumpf
Managing Director and Technology Controller
What are the goals of this discussion?

- Review survey and results to date (preliminary)
- Would like to understand how companies are approaching issues with regards to software licensing and maintenance
- Discuss the inextricable linkages between hardware tracking and software licensing
- Raise some of the common financial and control issues with regards to software and hardware tracking and approaches to deal with them
- This is a complex and evolving topic we have an initial survey that we can discuss and we also can evolve the survey based upon peer feedback
1. What is your threshold for setting up prepaid maintenance?

- We don't have a prepaid process: 27.3%
- Over $50,000: 36.4%
- $25,001 - $50,000: 27.3%
- $0 - $25,000: 9.1%
- Over $50,000: 38.4%

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>We don't have a prepaid process</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>$0 - $25,000</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td>$25,001 - $50,000</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>Over $50,000</td>
<td>38.4%</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
2. What is the average duration of your multi-year deal?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 years</td>
<td>9.1%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3 years</td>
<td>81.8%</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>4 years or more</td>
<td>9.1%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>
3. Who mechanically prepares the budget?

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is done centrally by IT Finance</td>
<td>81.8%</td>
<td>9</td>
</tr>
<tr>
<td>We use information provided by the financial system</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td>The individual teams retain this information</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td></td>
</tr>
</tbody>
</table>
4. What is the typical useful life of your software licenses?

<table>
<thead>
<tr>
<th>Useful Life</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 years</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>3 years</td>
<td>36.4%</td>
<td>4</td>
</tr>
<tr>
<td>4 years</td>
<td>18.2%</td>
<td>2</td>
</tr>
<tr>
<td>5 years</td>
<td>18.2%</td>
<td>2</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td></td>
</tr>
</tbody>
</table>
5. Do you typically pay a reduced licensing or support fee for non-production environments?

- Yes: 27.3% (3)
- No: 36.4% (4)
- Not Sure: 36.4% (4)

Total: 11
6. For on premise software, do you negotiate by core or by server?

- **By Core**: 36.4% (4 votes)
- **By Server**: 27.3% (3 votes)
- **Not Sure**: 36.4% (4 votes)

**Total**: 11 votes
7. Do you have a tool for tracking on-premise (owned) software licenses?

- Yes, a vendor tool - 27.3%  
- Yes, spreadsheets - 27.3%  
- No - 45.5%  
- Yes, in-house tool - 0.0%  

Total: 11
8. Do you have a system for tracking "cloud" licenses?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, a vendor tool</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td>Yes, spreadsheets</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>Yes, in-house tool</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>45.5%</td>
<td>5</td>
</tr>
<tr>
<td>Not sure</td>
<td>18.2%</td>
<td>2</td>
</tr>
</tbody>
</table>

Total: 11
9. Do you have an automated tracking tool for desktop software licenses? (such as SNOW)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>63.6%</td>
<td>36.4%</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2013 CME Group. All rights reserved
10. Do you leverage your configuration and monitoring tools (such as Service Now or BMC) for asset management and control, including software licensing?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td>Partial</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>18.2%</td>
<td>2</td>
</tr>
<tr>
<td>Future enhancement</td>
<td>45.5%</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
11. Do you have a system for tracking network assets?

- Yes: 60.0%, 6 responses
- No: 20.0%, 2 responses
- Future enhancement: 20.0%, 2 responses

Total: 10 responses
12. Do you use a tool provided by a networking vendor or your reseller?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18.2%</td>
<td>81.8%</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
13. Do you have a system for tracking servers?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, from a vendor</td>
<td>63.6%</td>
<td>7</td>
</tr>
<tr>
<td>Yes, built in-house</td>
<td>18.2%</td>
<td>2</td>
</tr>
<tr>
<td>No</td>
<td>18.2%</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
14. Do you have a system for tracking PCs?

<table>
<thead>
<tr>
<th>System Type</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, bar code system</td>
<td>64.6%</td>
<td>6</td>
</tr>
<tr>
<td>Yes, spreadsheets</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>18.2%</td>
<td>2</td>
</tr>
</tbody>
</table>

Total: 11
15. Do you uniquely identify assets in your fixed asset general ledger by serial number?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, all</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>Yes, only certain asset types</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>36.4%</td>
<td>4</td>
</tr>
<tr>
<td>Future enhancement</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td></td>
</tr>
</tbody>
</table>
16. Do you have a system for tracking asset spare parts (hard drives, memory, etc.)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>18.2%</th>
<th>Yes, spreadsheets</th>
<th>36.4%</th>
<th>No</th>
<th>45.5%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© 2013 CME Group. All rights reserved
17. What percentage of your hardware assets are leased and/or outsourced?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25%</td>
<td>10</td>
</tr>
<tr>
<td>26-50%</td>
<td>0</td>
</tr>
<tr>
<td>51-75%</td>
<td>1</td>
</tr>
<tr>
<td>75-100%</td>
<td>0</td>
</tr>
</tbody>
</table>

Total: 11
18. Are your leases generally capital or operating?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>36.4%</td>
<td>4</td>
</tr>
<tr>
<td>Operating</td>
<td>36.4%</td>
<td>4</td>
</tr>
<tr>
<td>N/A</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>
19. Do you have a central contract management system?

- Yes: 81.8% (9 people)
- No: 18.2% (2 people)

Total: 11 people
20. If you have a contract management system, does it send you notifications when your deals are up for renewal?

<table>
<thead>
<tr>
<th></th>
<th>Response</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>54.6%</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>45.5%</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
21. When negotiating, do you start with your company’s terms & conditions or the vendor?

<table>
<thead>
<tr>
<th>Term and Conditions</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our own terms and conditions, then negotiate</td>
<td>63.0%</td>
<td>7</td>
</tr>
<tr>
<td>The vendor’s terms and conditions</td>
<td>27.3%</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>9.1%</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td></td>
</tr>
</tbody>
</table>
Additional Comments Concerning Items Not Captured In Survey Questions

1. Tracking Enterprise versus tracking by specific operating units

2. “We have a mixture of tracking assets and software licenses. Some types of software tracking are automated through vendor tools while others are manual or not known really well. For fixed assets in our GL we assign a unique fixed asset ID to track them by. We try to capture serial number but they are not always captured or captured correctly.”
"The Building Blocks"

- Logical configuration for department, project, and account
- Optimally capture staff time, consulting spend, and open positions on an “apples to apples” basis
- Properly capture hardware, software, data center costs, and capitalized software development. Includes maintenance and depreciation
- Telecom and circuits, training, travel, overtimes, parts and misc. other expenses

Chart of Accounts

Capital Asset Process

Staff & Consulting Mgmt

Other Expenses
Code Organization

Organization of the financial DNA of the technology division:

*Department – Account – Project*

- Department: HR Ownership
- Account: Financial Categorization
- Project: Business functions and specific projects with start/stop dates
- Other potential codes – location and legal entity
Capital Asset Process

Asset Management (Servers, SAN, HW, PCs, Parts, Etc.)

Software Management & Licensing System

SW & HW Maintenance Payments (Prepaid/Useful Lives)

Fixed Assets

Depreciation (HW)

Amortization (SW) (Useful Lives)

Monthly Expenses

SOP 98 Offset

General Ledger

© 2013 CME Group. All rights reserved
The Complex World of Assets

Other Complications
- “Asset” is physical assembly to be counted, in GL is a collection of cards, ports, chassis
- Not Unitized

Never the Same
- CISCO for networking
- HP/Dell for servers
- Software licenses for Microsoft/Oracle
- Appliances for Oracle, SAN, etc.

Asset
- What the accounting system says
- What you find when you count the asset physically
- What the vendor sales records say
- What the reseller's maintenance records say
- What the tracking system says

What you find when you count the asset physically
Software Licensing Methods

• **Named user licenses**
  • By user type
  • By administrator
  • Certain types of users (end user) may be unlimited

• **Licenses by processor or by core or “power rating” or capacity**
  • By environment (production / non production)
  • Reduced cost licenses for development

• **Concurrent licenses**

• **Unlimited licenses (Enterprise deals)**
  • Generally only for a selected product (not future iterations)
Software Licensing Tools

- **Custom by Application**
  - For example, Oracle has its own tools
  - Agents may be installed

- **Using Other Monitoring Tools**
  - BMC or Service Now or HP Openview

- **Build Custom Solution or Spreadsheets**
  - No one tool covers all types of systems, from mainframes to PC’s

- **PC and Software control tools**
  - Used for configuration (“Snow”) and also can be used for tracking
PC and Software Control Tools – Snow Example

Default Snowboard

Inventoried computers per month

Shortcuts
- Add license
- Add agreement
- Administration
- Import

Alert list
- 1,068 applications (70,207 installations) that require licenses do not have registered usage
- 321 computers have less than 200 MB system disk space available
- There are 92 quarantined computers in the system
- According to the compliance calculation 3/17/2015 [10:00 AM] there are 994 underlicensed applications

Computer inventory status

Usage per application

© 2013 CME Group. All rights reserved
PC and Software Control Tools – Computers Overview

**Computers overview**
Overview for inventoried computers

**Computers per type**
- **1,605**: Desktops
- **2,630**: Laptops
- **318**: Virtual machines

**Most installed operating systems**
- **4,209**: Windows 7 Enterprise
- **322**: Mac OS X 10.9 Mavericks
- **12**: Mac OS X 10.10 Yosemite
- **7**: Windows 7 Professional
- **2**: Windows Server 2012 R2 Standard

**Inventory status**
- **1,068**: Inventoried within last month (7%) and Older than a month (2%)
- **335**: Inventoried within last week (13%)
- **76%**: Inventoried yesterday/today (78%)

**Most frequent computer manufacturers**
- **1,660**: Dell Inc.
- **1,069**: Lenovo
- **335**: Hewlett-Packard
- **318**: Apple Inc.
- **1168**: VMware, Inc.
PC and Software Control Tools – Users Overview

Applications with the highest average usage time (minutes):
- Growly Notes 2 (Mac) (1384)
- CatchMouse 1 (Mac) (1381)
- Sequel Pro 0 (Mac) (1320)
- Divvy 1 (Mac) (1305)
- MoliRaider 0.5 (Mac) (1287)

Used computers per user:
- 1 computer (82%)
- 2-5 computers (16%)
- 6-10 computers (1%)
- > 10 computers (0%)

Time interval of last logon (user count):
- Yesterday/Today (1956)
- Within last week (2415)
- Within a month (1079)
- Over one month ago (187)

Top TS-applications with overlapping local usage (overlapping users):
- TS-Eclipse (11)
- TS-Launty (9)
- TS-PutTY (3)
- TS-Java JDK 1.7.0 (3)
- TS-Chatler Desktop 3 (2)
Invoice Consolidation and “True Up”

• **Important to Get Ahead of Invoicing**

  • Want to consolidate invoices into a single annual invoice say on May 31 (as an example)
  
  • All items purchased after May 31 have a “partial period” prepaid (say 8 months if bought 8 months ahead of the next May 31 date)

  • Then these items are “rolled in” to the true up and on the “base” annual invoice

• **Unitization of Assets and Invoicing**

  • Important for the vendor to invoice in consistent “units” so that the three way match can work

  • For example a server must be one asset for $4000 not cords, power supply, processors, etc…
Hardware Tracking Tools

- **Tracking Tools**
  - Agent based, may be built by manufacturer or re-seller (networking)

- **Using Other Monitoring Tools**
  - BMC or Service Now or HP Openview

- **RFID – Wifi or “internet of things”**
  - Tool such as RF Code which tracks all gear (once installed) and forces a “check in”

- **Bar Code / Hand Helds**
  - Used for PC’s (can also go RFID) and can tag “bins” for parts that aren’t individually identified
Hardware and Software Tracking Issues

• Tracking While in Storage
  • Items are bought and then put into storage; they cannot be accessed by software tools (unless RFID tagged upon arrival)

• Tracking Across Firewalls
  • Often security or firewalls block tracking, items go “off the network”

• Uploading / Synchronicity of Data
  • Often hand helds are done with local data and must by synched to a central source; timing of uploads must be controlled
Example – Unitized and Non Unitized Assets

• Example for Analysis
  • Buy 4 Unix servers for $20,000 or $5000 / each

• How They Can Be Set Up in the General Ledger
  • Example A is the “Unitized” model
  • Example B is the “Non-Unitized” model

• Frequency of Each Type
  • A hypothesis is that most assets are non-unitized
  • Likely only very large and specific assets (Mainframes, SAN, Exadata) are commonly unitized – but this is only speculation
  • Unitized assets makes physical audits and decommissioning much easier but is also orders of magnitude more difficult to maintain
### Example One – Unitized Assets in Ledger

Each asset has a unique location and can be physically found by GL Data for audits.

<table>
<thead>
<tr>
<th>Description</th>
<th>Asset ID</th>
<th>Serial #</th>
<th>Cost</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unix Server</td>
<td>A123</td>
<td>SN55511122</td>
<td>$5000</td>
<td>Chicago A2</td>
</tr>
<tr>
<td>Unix Server</td>
<td>A124</td>
<td>SN56722233</td>
<td>$5000</td>
<td>Chicago A2</td>
</tr>
<tr>
<td>Unix Server</td>
<td>A125</td>
<td>SN22232201</td>
<td>$5000</td>
<td>New York N3</td>
</tr>
<tr>
<td>Unix Server</td>
<td>A401</td>
<td>SN33301122</td>
<td>$5000</td>
<td>London N4</td>
</tr>
</tbody>
</table>

This is the unique ID in your general ledger that accountants use.

This serial # is per the vendor and used to reconcile to their records and for maintenance.

4 assets are set up with value of $5000 each & can be uniquely identified and disposed of.
### Example Two – Non-Unitized Assets

<table>
<thead>
<tr>
<th>Description</th>
<th>Asset ID</th>
<th>Serial #</th>
<th>Quantity</th>
<th>Cost</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unix Server</td>
<td>A234</td>
<td>(blank)</td>
<td>4</td>
<td>$20,000</td>
<td>(blank)</td>
</tr>
</tbody>
</table>

The ID will be assigned by the system and accountants will use this but it really represents a purchase not specific assets.

Serial # is blank because it represents multiple servers with four unique serial numbers.

The total purchase amount is included since it is made up of many individually purchased components.

Since this represents multiple assets a unique location cannot be determined.
What To Do With Your Asset Pool

• You Likely have a mix of Unitized and Non Unitized Assets
  • Most companies will have almost all non-unitized assets

• Your GL is Now Out of Synch with Your Tracking Tools
  • Assets will be retired, sent back to the vendor, and you won’t be able to show in the GL
  • It is often very difficult to explain this to your accounting departments and outside vendors

• How To Conduct an Audit
  • You will need to audit against your own tracking tools
  • In aggregate you will need to reconcile back to the general ledger
  • You only have losses when you dispose of items before their useful life or if gear is lost and cannot be found
Reconcile to your Vendor Records

• **Many companies use re-sellers**
  - Most companies will utilize re-sellers for many classes of assets such as PC’s, servers, networking equipment, and security gear
  - Your re-seller should be able to pull your records by purchase order, serial number, ship date, etc…
  - Reconcile your vendor’s records to your physical asset records and chase down any significant gaps

• **Financial Lives**
  - If you use shorter financial lives your risk of financial misstatement will be correspondingly reduced
“The Dock”

• **Do You Have a Physical “dock”**
  • Method of receiving goods when they arrive also constitutes capital acquisition for hardware
  • Part of your “three way” match (purchase order, invoice, receipt)
  • Receiving procedures likely will vary based on the size of the location and its financial sophistication – we have offices, data centers, remote hubs for telecom, etc…
  • Need to determine when receipt occurs for software
Auditing

- **Your Software Vendors May Audit You**
  - Important to plan ahead and have some sort of licensing tracking method in use for your major vendors
  - Generally if you are working “in good faith” you will be in a better position

- **Your Financial Auditors May Audit Your Assets**
  - Will likely attempt to “pull” from the General Ledger – this may be difficult since most assets are not unitized
  - Plan alternate method with your own records and have a manner of reconciling to the GL at a high level
What Does Your Software Cost Per Year?

- Often Difficult to Answer for “On Premise” Solutions
  - Often you may have legacy licenses that you’ve pulled forward for year after year which still have “value” but are fully amortized
  - On a given year you may need to make a purchase to “true up” your licenses which will hit capital in the current year
  - You may also have one-time costs to setup a product which may or may not be capitalized
  - Maintenance is likely easier to calculate since it is more consistent year on year compared to capital
  - You may need to create a “good enough” answer using “smoothed” capital plus maintenance in order to send the right signals to the business on software costs
- This process is much clearer for “cloud” services