Application Streamlining:

Why and How

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Abstract

The Application Streamlining Initiative introduces enterprise application management to Cornell. This document explains why we should manage our applications and how to do so in a practical and effective way to produce actionable information with an appropriate level of effort, and proposes that a database of applications is maintained and kept up to date. An application is defined and the application value ratio is proposed as a first cut metric.

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Introduction: Why evaluate Applications as Assets?

As economic resources which produce value, applications are essential assets of the organization. Almost every job at Cornell depends to some extent on information technology (IT) applications. They are often managed quite well as software, but have for the most part not been managed as assets across the enterprise.

Typical IT management metrics include trouble tickets, code updates, compliance with agreed service levels, operational requirements, etc. While some larger applications include metrics like ROI, this is less common. The vast majority of applications at Cornell have not been evaluated as assets, and there has been no holistic campus wide effort.

Application Management is the business process of the planning, organizing, optimizing and controlling of the suite of applications with the goal of achieving the greatest return, however that is defined. The first phase of this effort is to inventory and categorize. Follow on phases are to evaluate and improve the applications suite.

Building the Application Portfolio

The sound financial management of Cornell's application assets is predicated upon the gathering and analysis of actionable, relevant data.

The benefits of application management:

1. Visibility for senior management.
   The specific business goals that IT staff work translates to can often be opaque to senior managers. Having a list of applications will provide an important mechanism for understanding which business goals IT efforts are being directed towards. This alone provides sufficient value for application management.
2. The ability to make sound financial decisions based on business value to the organization.
   Having easy access to one side of the business value – cost equation but not the other can result in systematic decision making bias. Providing both value and cost as a consolidated metric increases decision making accuracy and effectiveness.
3. The ability to make cross-college and –unit optimization decisions.
   A complete campus wide list measured with a consistent metric makes it easy to see which areas need additional focus, and allows across campus optimization.
4. It creates focused, actionable information.
   Evaluating all applications on the same scale simplifies understanding. Identifying and understanding duplication allows managers to make a strong business case where needed. Because campus wide benefits are realized, resources can be focused from all beneficiaries to solve problems more quickly.

In order to be effective, an application management process must meet the following criteria:

1. Low cost.
   If a review process is expensive, poorly understood or overly complicated, it will not be repeated. If we wish to keep our list of applications in date, the reporting and application process needs to be simple.
2. Understandable.
   Enterprise application management is a new approach which represents change. For it to be accepted, it must be well understood and clear in its value.
3. Iterative approach.
   Accurately defining business value and cost is extremely difficult. Any attempt to precisely do this for all applications on campus is complicated and risks producing results which are precise but not accurate. For cases where the value is very high or very low, there is little point in accurately determine an application's exact score – what's important is that it is above or below a certain hurdle value. A cheaper, more efficient approach to a one-time survey is to iteratively cycle through the applications, focusing first on clear candidates, sieving the list down through progressive elaboration. An added benefit to this approach is that it will not flood the next task downstream. Doing it all at once would create a single, large list which cannot all be acted on. The list would be out of date by the time we reached some of the applications. An iterative approach allows reaching for the low hanging fruit first.
4. Single metric.
   Easy to understand, applicable to all applications regardless of size and purpose, allows widely differing applications to be evaluated on the same business value continuum. The Application Value Ratio (AVR) accomplishes this.

What is an application?

For the Application Streamlining Initiative, an application is software designed to implement a repeatable set of tasks in a shared, managed environment for a business purpose. It does at least one of:

- Manipulates / transforms data.
- Maintains data (does not just display it) for a data source.
- Extracts data from more than one source and displays a consolidated view.
- Implements business logic rules to automate business processes.

For our purposes, the following are not included:

- Personal productivity applications like email, Excel, Word, anti-virus software, VPN clients, software license managers.
- Websites which just present information.
- CommonSpot websites which do not have any managed elements, or simple managed elements.
- Applications which serve only research purposes. Applications which are dual business and research should be counted.
- A key part of the definition is "managed". Scripts which are used to automate tasks on your desktop, even though they are important to system administration and other tasks, are not

included. Code which is not versioned and does not undergo any quality assurance (even informal QA), is maintained by a single person and would not require significant effort to recreate should in most cases not be included.

- Powershell or other short scripts

The following are included:

- Business specific applications such as vacation trackers, time away planning, SIP awards, space planning, wikis, and collaboration tools.
- Administrative applications such as budget tracking, extracting data out of a data warehouse, combining data from two or more sources for presentation on a single dashboard, reporting software.
- Different versions are counted as separate applications if they are hosted separately and independently. That is, each version has its own associated hosting and maintenance costs.

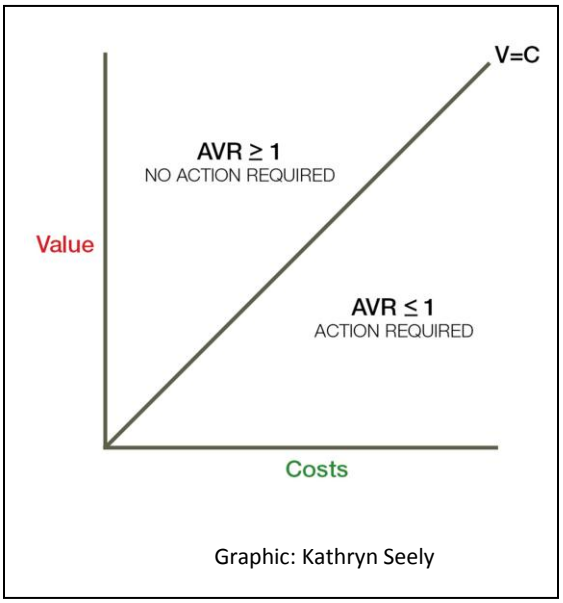
The emphasis is on quick turnaround of each iteration.

The Application Value Ratio

Not all applications deliver the same amount of value per unit cost. The AVR, a ratio of the perceived value delivered compared to the cost of an application[1], allows applications to be ranked in terms of how much proportional value they provide to the organization.

$$\text{AVR} = \frac{Business\ Value}{Cost}$$

Business Value is determined by considering factors such as legal requirements, user base, strategic alignment, reach, and others. Cost is based on the overall cost to the enterprise, including hardware, software, service levels, staff, etc.



Graphic: Kathryn Seely

Business value is obtained by asking the users and service owner. Cost is obtained from the budget line items and asking IT staff. The ASI working group will be producing a detailed scoring matrix for both business value and cost.

AVR > 1: Application delivers more value than it costs.
AVR < 1: Application costs more than it delivers in business value

It is worth noting that a score of below one does not necessarily mean an application should be removed from the portfolio, just that it should be included in a second round iteration. Likewise, an application scoring over one is not necessarily excluded from future iterations. For example, if two

[1] As far as I know the AVR was invented at Hewlett-Packard

applications, both with high scores, perform the same task in different units, they may be candidates for consolidation. Applications should be considered on a case by case basis.

Process

As noted above, the process is iterative. The first iteration has three deliverables:

1. A list of applications across campus, by unit/college, with associated AVR.
2. Determination of a hurdle score.
   By default this is 1.0. As a basis, applications with an AVR of > 1 will not be given further attention unless they are part of a consolidation effort to reduce duplication.
3. A list of findings, including a list of applications which deserve additional attention.

Based on these findings, senior management can then decide on a course of action on a case by case basis and iterate through the list again. This process has three steps:

1. Determine if additional information is needed to further understand the cost and value.
2. Obtain additional information. This can be through more detailed questionnaires or meetings with business owners and IT staff, etc.
3. Provide a recommended course of action for each application. This can be one of:
   a. Retire the application and provide the business value through another mechanism.
   b. Merge the application with others or otherwise increase its business value.
   c. Reduce costs, for example by moving the application to a cheaper environment, or providing a reduced level of service.
4. Summarize findings and communicate relevant actions to interested and affected parties.

This process can be repeated as often as needed, successively reducing the number of applications in the list until a number is reached which is appropriate for our capacity, ensuring that findings can be immediately and effectively acted upon. This will most likely be based on the capacity of the organization to carry out the necessary changes to the applications.

Summary

Application management is a new business process at Cornell University which offers a number of advantages, such as increased visibility for management, and the potential for cost savings. An effective application management process must be understandable, achievable with a small amount of effort and actionable.

The Application Value Ratio provides an easy to understand common evaluation metric which facilitates comparison independent of application size and scope. It is proposed argued that this works best as an iterative process. By starting with a coarse grained metric and applying successive elaboration, it is possible to deliver value while the project is in progress, learn from previous iterations and produce accurate and consistent results.