

An Approach to Managing Application Landscape

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Abstract

This Article begins with a description of the challenges faced by CIOs/CTOs of enterprises in managing their Application Landscape. The authors frame the strategy in 4 stages a) *Where are we now ?* b) *Where do we want to go ?* c) *How do we get there ?* d) *Methodology for modeling application Landscapes* viz current and future states. In subsequent sections the authors drill down in 2 stages in greater detail--c) How do we get there? and d) Methodology for Modeling application landscapes. The authors then describes the term "Application Landscape" in the context of the artifact. The authors touch upon a variety of approaches and classifications for managing the Application Landscape (Stage c) and then proceeds to discuss a modeling methodology for building the applications landscape for the current and future states (Stage d). Then follows a description of the benefits that accrue to the business when Application Management is effectively carried out

Introduction

There is an ongoing need for Application Landscapes to adopt to new and ever changing business requirements efficiently and optimally. The ever changing business environment spawns heterogeneous and complex application landscapes. It creates an IT landscape resembling silos of systems and business processes that evolved organically or inorganically over several years.

Necessary refinements are frequently patched into the landscape without adhering to established frameworks and processes. New technology, legal requirements and tougher security and compliance requirements exacerbate the situation.

Newer technologies are introduced without decommissioning an equivalent volume of legacy technology. The older an IT system gets the more difficult it becomes to maintain the application.

Strategy

Aligned with the corporate strategy, the application strategy provides a roadmap for medium to long term application development. The roadmap's primary purpose is to forge connections between the current state and the future state of the application landscape. The application strategy is designed to provide answers to the following critical questions:

- Current State: Where are we now ?
- Route to the goal: How do we get there ?
- Future State: Where do we want to go ?

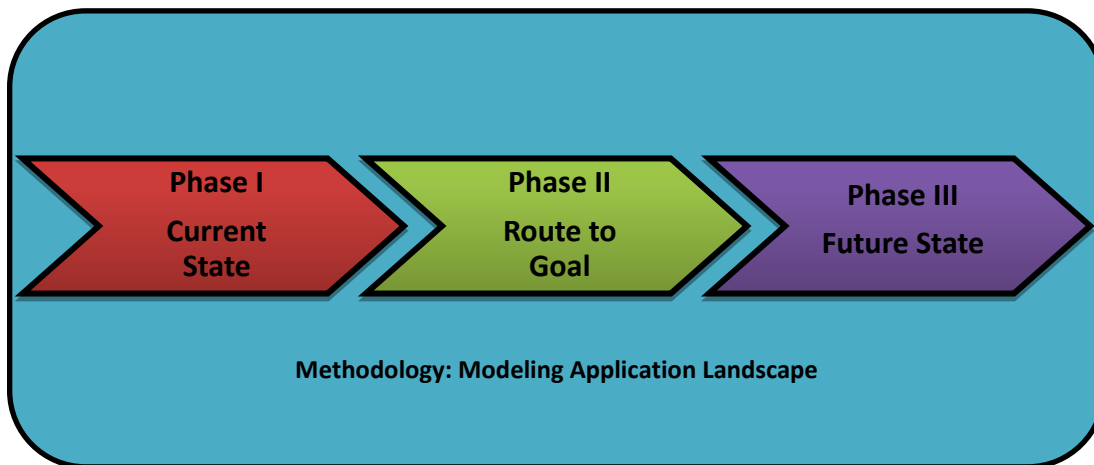


Figure 1: Methodology: Modeling Application Landscape - Progression Picture

N.B. The later sections will refer to this progression picture.

Challenges faced by CIO/CTOs

This section addresses the challenges faced by CTO/CIOs managing their Application Landscapes. Generally speaking, an enterprise's application landscape includes more applications than the business needs. Obviously, this increases operating expenses and diverts attention from the important goals of innovation and growth. To avoid such a drain on resources, a top priority of the CIO must be to develop a closer alignment of business goals and IT.

To achieve an effective realignment, an enterprise needs to review its current application landscape management and create long-term modernization strategies as explained in the later sections

- Managing interdependencies and connections that exist within and between business and IT structures
- Identifying potential for optimization in IT
- Determining interdependencies and the impact of changes in IT
- Bringing the Application landscape into compliance with standards, processes and frameworks
- Effectively steering the future state development of the Application landscape
- Making visible the contribution of IT to the business success of your enterprise
- Scoping out the need for action and potential to optimize IT support
- Building Application landscape that supports the organizational vision and address the IT strategy for next 3-5 years.
- Revealing the interdependencies and the impact of business changes
- Identifying sections of business and IT which are loosely or tightly connected
- Analyzing and appraising the potential impact of organizational restructuring
- Evaluating and comparing various planning alternatives

Application Landscapes

In this Article, we present a high level view of an enterprise's application landscape. This encompasses aspects of application and business architectures. We present an approach reviewing and refining the application landscape in subsequent sections of this Article. Aligning application landscapes with business goals requires the following steps:

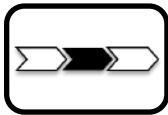
- Articulating the inter-dependencies between business and IT
- Pin-pointing areas that require optimizations, consolidations and modernization
- Anticipating the impact of business requirements on IT
- Presenting a 360 degree view to all stake holders in IT and Business

Application Landscaping presents a big picture of the current state and its progression to the future state. A properly designed provides the enterprise with valuable strategic inputs and a competitive advantage in the marketplace.

Managing Application landscapes: Route to Goal

Application strategies are generally presented with landscape diagrams. This gives an over-all view of application integrations and interdependencies. It supports the decision-making process and facilitates the modernization of the application landscape. The strategy provides the directions for adding value, enhancing day to-day operations and making the enterprise more agile and competitive in the market place.

This **Route to Goal** section has been divided in 2 phases. Phase I is classification of applications based on standard techniques, and Phase II is envisioning the future state. Please note it's the combination of these phases that in essence provide the way forward to the "future state" landscape.



1. Application Landscape: Classification Mechanism

The six techniques discussed in this section are industry standard portfolio classification mechanisms. The process is to map the application landscape into four quadrants and assess it on these parameters--business process, technical value, strategic, business value and risks. The next step is to determine the way forward in terms of strategic, tactical and retirement candidates. The combination of these classification techniques facilitate the decision-making process as it pertains

To categorization, evaluation, prioritization, retirement and modernization of applications in the landscape.

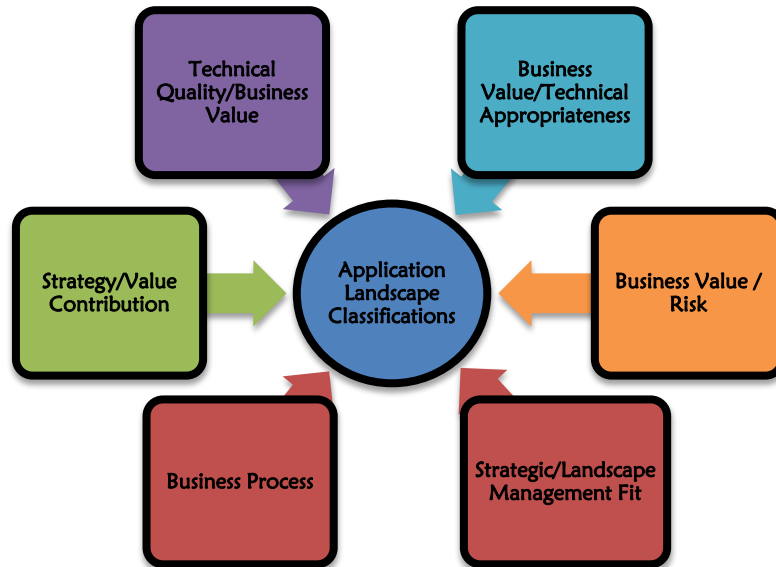


Figure 2: Application Landscape Classifications

a. Business Process

The business processes are classified in a portfolio according to their competitive differentiation and change rates. Business processes are considered to be high differentiators if they play a key role in sustaining or expanding the business. Business processes have a high change rate when they must constantly be adjusted to changes in the competitive environment or other external conditions.

Each quadrant denotes a typical strategy – in this example the four quadrants are titled automated and integrated, agile, automated & standard and manual & standard. Each application is placed in the quadrant containing the business processes which it supports.

b. Strategy/Value

This application portfolio is based on the concept proposed by McFarlan. It maps the portfolio to a diagram consisting of 4 quadrants. This concise presentation of how IT contributes to present and future business success makes it a good tool to aid communication between business managers and IT professionals on plotting the future direction of the application landscapes.

Applications are classified according to their value contribution and strategy contribution. The value contribution indicates the extent to which a system supports business processes that create competitive advantage for the organization. The strategy contribution indicates how the system contributes to enacting corporate strategy, in other words, its part in the future business success of the enterprise. The portfolio's four quadrants are High potential, Strategic, Key operational and Supports.

c. Technical Quality/Business Value

The applications are classified into four quadrants according to technical quality and business value. The technical quality takes into account both the status of the application along its lifecycle and the extent to which performance, security or other QoS requirements have been implemented. The technical quality largely determines

the effort involved in the evolutionary development of an application. The business value comprises the contribution that an application makes both to strategy and enterprise value. The portfolio's four quadrants are Question marks, Invest and expand, Renew, Divest

d. Business Value/Technical Correctness

Applications are classified according to their business value and technological suitability. Instead of four quadrants, this portfolio works with five. The technological appropriateness dimension encompasses the technical quality, modernity, complexity and age of the application. It also includes an appraisal of the application lifecycle and available IT resources. The relative positioning of applications within this matrix brings into focus the areas that cost reduction measures could feasibly target without jeopardizing the overall sustainability of the applications.

The portfolio's five quadrants are Catch up on investment, Skim benefits, Balanced at Present and Monitor, or invest and cull.

e. Business Value/Risks

Applications are classified according to their business value and risk. This has similarities to the portfolio business value and technical quality. The business value comprises the contribution which an application makes both to strategy and enterprise value. The risk value determines that risks associated with the application within a landscape.

f. Strategic/Landscape Management Fit

Applications are classified according to their strategic and landscape management "fitment." The strategy contribution indicates how the system contributes to enacting corporate strategy e.g. its part in the future business success of the enterprise. The Landscape Management "fitment" determines the alignment of IT Landscape with the business objectives.

g. Deep Dive (Quadrants and Qualities): Strategy/Value contribution

The diagram below depicts the strategy/value quadrants with the classifications and the application qualities that are mapped to each of the four quadrants. Each quadrant denotes a typical strategy. The portfolio's four quadrants are High potential, Strategic, Key operational and Supports. Based on the planning status, the applications can be further classified into current, planned and target and health status, green, yellow and red. Apart from classifying attributes "strategy" and "value contribution", the chart also presents information about the cost and health of the applications. The figure depicts the business reference model into which you place applications. By mapping the applications to the diagram, you can create a graphic presentation of the business support.

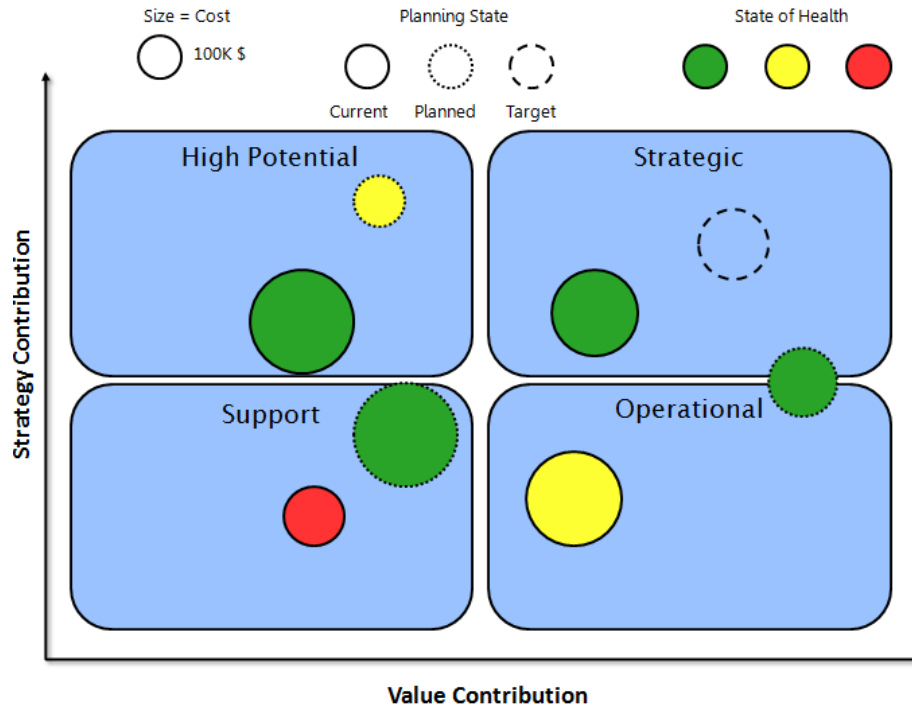


Figure 3: Strategy Vs Value Classifications

The application qualities in each of the four quadrants are as described below.

Strategic Applications: Strategic Controlling with focus on efficiency and effectiveness

- Provides clear competitive advantage accrue for the business through this application
- Application supports a specific business goal and/or a critical success factor

High Potential: Strategic Controlling with focus on cost cutting.

- Application leads to future benefit or value for the company

Operations: Operational Controlling with focus on efficiency and effectiveness

- Application eliminates an organization's business disadvantage among its competitors
- Application prevent a potential business risk from becoming a more serious problem in the near future
- Application assists fulfillment of formal requirements

Support: Operational Controlling with focus on cost cutting

- Application contributes to raising business productivity, or can it help achieve sustainable cost reduction

2. Application Landscape: Envisaging the Future State Landscape

Application Landscape Management is comparable to an open heart surgery. The following paragraphs list a pragmatic approach for envisioning the future state application landscape. The combination of these techniques will facilitate building the future state applications

landscape. The best choice is always Simple and Robust as opposed to Complex and Unstable.

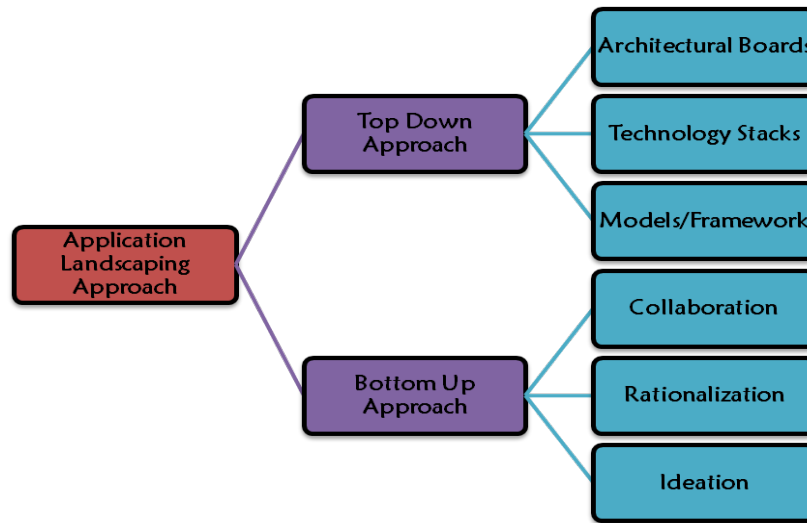


Figure 4: Approaches -Application Landscaping

a. Top-Down

This Top-Down approach is the 'Ideal' for meeting business expectations. The key input to this approach is IT strategy followed by business processes and functions, followed by the business and application architectures. The approach is primarily involved in defining a target environment aligned with industry benchmarks, standards and processes.

- Architecture Board: The architecture board governs such areas as frameworks, standards, stacks, implementations choices and provides the necessary steer.
- Technology Stacks: Architecture board decides what technology platforms/product stacks are allowed for application development. (either within the IT department or by external (cloud) providers),
- Models/frameworks: Organization modeling creates an overview of the organization structure depicting sub units and sub practices. Services/processes can be extracted based on such models.

b. Bottom-Up

In this approach, the application landscape results from choices by members and business units, primarily involving identifying weak-spots/links in the current system environment.

- Collaboration: Requirements, components and interconnections between components are created as a collaborative/voting effort among members from different departments and optionally, external vendors/partners.
- Rationalization: Business should not create large application estate. The strategy is rather to decommission applications, merge applications or consolidate on selected technology platforms.

- Ideation: Create ideas for new applications or extensions to the existing applications. The best ideas will be selected and unpopular applications will be retired.

Methodology: Modeling Application Landscape

This stage allows enterprises to create a big picture of the current state and its progression to the future state. Pictorial views are the best tools for shedding light on the landscape. Each diagram emphasizes different aspects based on domains. The outcome presents meaningful information at a glance that can immediately use to make strategic and tactical decisions. Application Landscape Management methodology creates pictorial views of the current state and future state governed by the approach described earlier.

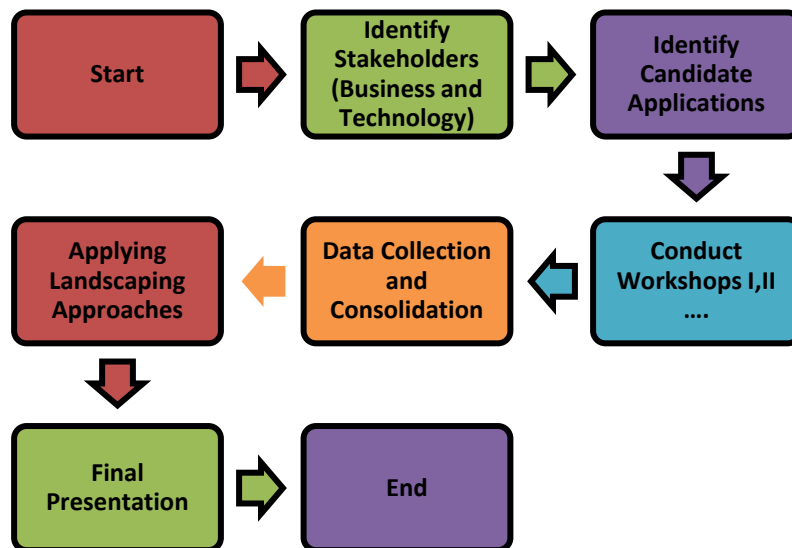


Figure 5: Methodology - Application Landscaping

Step 1: Identify the stakeholders from Business and Technology. These groups will play an important role in subsequent phases of the process, including the workshops.

Step 2: Identify the legacy technology stack in the current scope that needs to be migrated to a future state.

Step 3: Conduct multiple workshops with the stakeholders to understand and assess the existing landscape and identify pain points in the current landscape.

Step 4: Collect the data that is gathered from earlier phases to build an “as is” state of the Application Landscape and analyze the gaps within.

Step 5: Apply the Landscaping approaches discussed earlier to build a future state of Application Landscape.

Step 6: Present the artifacts that depict current state the future state and the strategy to the stakeholders.

Application Landscapes: Strategic Decision Making

The application landscape consisting of business processes Vs Application in the estate facilitates a simple but effective decision making process. Variations of such representation and classifications mechanism described earlier are effective tools for the stakeholders to embark on the future state landscape vision and strategies. The below diagram depicts the theme to identify candidates for blind spots, consolidation and mergers of application in the landscape. The objective of such representation supports the following decision making process

- Obtain a birds-eye view of the IT landscape Vs. business processes
- Identify need for action and potential for optimization in the application landscape.
- Deliver factual evidence promptly on the feasibility of particular applications being integrated into a portal.
- Design, analyze and appraise planning scenarios for the target landscape and its implementation roadmap.
- Identify points where there is a need for action or potential for improvement on technical standardization/best practices.
- Identify the need for action and potential for improvement relating to the infrastructure, such as the degree to which economies of scale have been applied.
- Effectively drive the strategic evolution of the IT landscape by actions such as checking progress and verifying consistency of implementation with the to-be and planned landscape models.

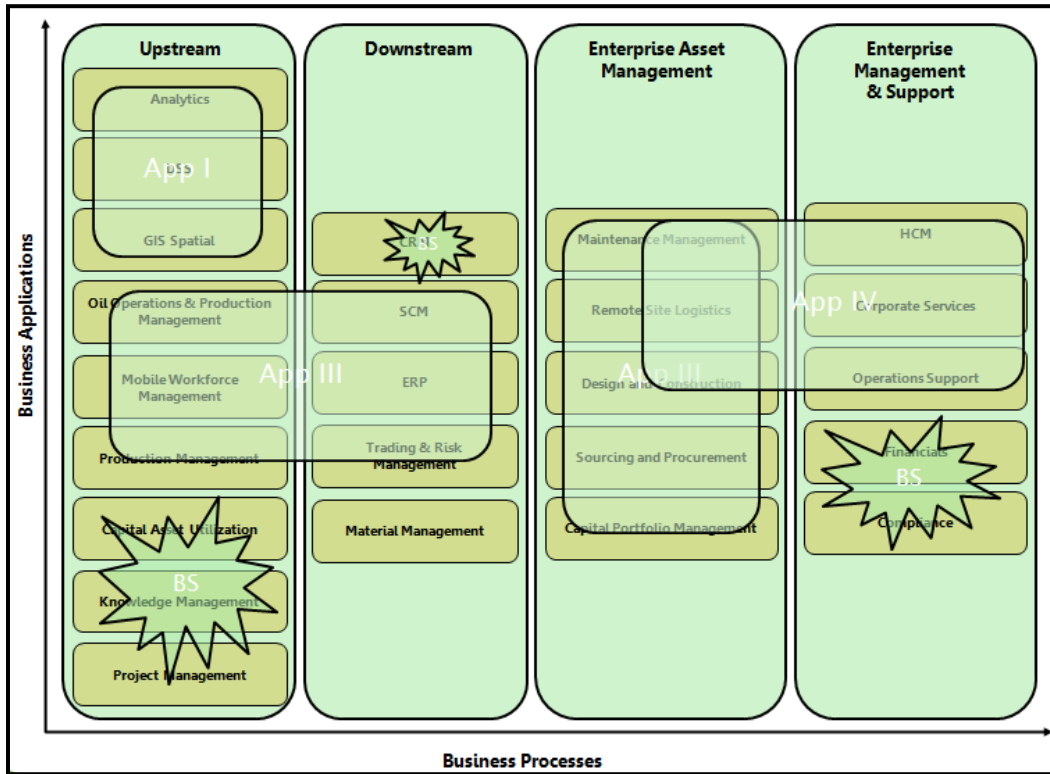


Figure 6: Application Landscape – Decision Making

Benefits to the Enterprises

The table below summarizes the Benefits of Application Landscape Management

Business	Strategic	Operational
<ul style="list-style-type: none"> • Common business language • Linkage between business and IT • <u>Optimising</u> of business through IT • Transparency of business impacts/dependencies • Business-oriented control and direction of IT 	<ul style="list-style-type: none"> • Strategic objectives • <u>Optimisation</u> of application landscape • Supporting technical <u>standardisation</u> • Supporting infrastructure planning • IT landscape planning 	<ul style="list-style-type: none"> • Governing development of IT landscape • Simplified documentation requirements • Supporting operational planning and control of IT • Supporting internal service delivery and vendor management • Reduced effort in initiation of projects and input for project management

Figure 7: Benefits of Managing Application Landscape

Conclusion

Transformation changes the entire application landscape or large portions of landscape. Transformations due to mergers, acquisitions or overhaul to processes tend to bring a radical change to the entire business landscape and by association its entire IT.

- **Merger:** In mergers or acquisitions, the disparate application landscapes have to grow and blend into a common landscape.
- **Demerger:** When an enterprise spins off parts of its operation, the application landscape has to be modified accordingly, and non-essential parts have to be removed.
- **Overhaul:** To stay competitive in the market place enterprises overhaul the entire IT and processes landscape to progress to a future state.

Such transformations typically involve an organization's business processes, IT and the master data transformation. The Application Landscape model has to be examined in terms of its "fitment." The application classification enables to pinpoint areas where there is need for corrective action or potential for optimization. Having identified these action points and potentials, you can develop and appraise ideas by using the approach detailed in this Article.

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