



Technology Blueprinting

A Methodology for Selecting the Right Technology
Platform to Support New Digital Products

Technology Blueprinting

There are many challenges to launching successful digital products, not least of which is selecting the best technology platform. Innodata's methodology for selecting technology on which to build a new digital product can help overcome this challenge by giving you confidence that the investment you make will support your goals and give you visibility into the risks and issues you will face as the digital products are developed.

Abstract

In complex organizations with many competing demands on time, individual perspectives, embedded preferences and shifting priorities, how do you ensure that you have made the right decision when it comes to selecting technology platforms for new digital product initiatives? Making the wrong decision can have severe consequences, from launch delays to missed revenues. To make this critical decision, Innodata deploys a Technology Blueprinting methodology that recognizes that the right decision is a function of five key dimensions:

Table of Contents

Abstract	1
Introduction	1
High-Level Solution	3
Solution Details	4
Business Benefits	7
Summary	8
About Innodata	8
More Information	9

Right Result = References + Ability to Execute + Risk Assessment + Fit + Cost

In this paper, we describe Innodata's five step methodology to evaluating candidates for technology investment. This methodology produces a deliverable upon which a digital product initiative can successfully be completed.

Introduction

Exploring the myriad paths available when evaluating technology platforms to support new product development can often lead to confusion over which direction to take. A well-known passage in *Alice in Wonderland*, when Alice meets the Cheshire Cat, provides advice on direction:

"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where," said Alice.

"Then it doesn't matter which way you go," said the Cat.

If you have a developed digital product vision, it matters that you know where you want to go when selecting

technology. And the stakes have never been higher as technology takes an increasingly important role in everything we do in developing content and data-rich digital products.

The Standish Group's *Chaos Chronicle III* report concluded that 66% of major IT-based projects fail when measured against key yardsticks of whether they are on-time, on-budget, and on-scope. When launching a new digital product, failure can be evidenced by cost overruns, revenue shortfalls, incomplete features and the inability to launch the product on schedule. Underpinning the risk of success and failure is the necessity to get the key technology decisions right, especially when selecting the applications upon which to develop technology platforms to launch new products.

There are some situations where the vision is clear and the path is also clear, such as when you are launching the second product in a suite that is substantially similar to the first. In this case the technology decision is already made. However, if you're embarking on a new digital product direction or looking to replatform an existing product technology, then the risk of getting the technology decision wrong is substantial.

IT investments are usually proposed and justified as relatively well-bounded projects, but in reality they operate within a complex human, technological and economic system called "the business." Businesses can face three common challenges in the selection process for new product technologies:

- 1. Organizational or Individual Bias:** when the project and the decision crosses organizational functions, bias based on the loudest voice can be introduced into the selection process.
- 2. Lack of Structured Methodology:** businesses often lack a structured and objective methodology to use in the selection process.
- 3. Absence of Data:** many businesses are dependent on a limited subset of the total available data and lack the necessary inputs across all dimensions of decision making to make a truly objective and sound decision.

Technology Blueprinting aims to ensure that the right decision is made in order to overcome these common challenges. This methodology incorporates five assessment steps detailed below, removes subjectivity from the equation and helps ensure the correct technology decision. The principal risks of making the wrong decision are:

- Embedded views or preferences preclude objective decision-making.
- Costs are not fully understood or revenues not achieved.
- Product launches are delayed (or even not achieved).
- Platforms do not perform to expectations.
- Management are not made aware early in the project delivery lifecycle of compromises that may need to be made to business or functional requirements and, therefore, have to redefine and reprioritize on-the-fly and late in delivery lifecycles.

A successful approach to technology evaluation and selection results in secure knowledge in the technical viability of a new digital product:

- Stakeholders have visibility, in language that all understand (from IT to business leaders) of the key consideration and the decision making criteria used.
- Points of view or preferences are taken out of the equation and replaced by clearly organized and weighted criteria.
- The process of building and deploying your digital product can start secure in the knowledge that goals can be met.

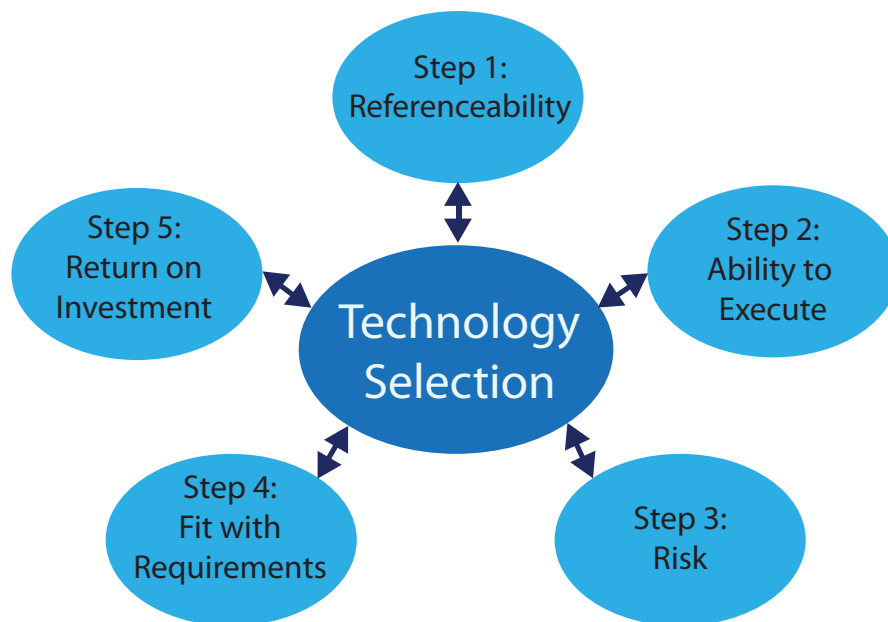


Figure 1: Five Dimensions of Technology Selection

High-Level Solution

The Technology Blueprinting methodology is a structured approach, with five assessment steps that evaluate the most important factors for making a decision on technology investment:

Step 1 — Referenceability: Has the technology under consideration been used successfully to launch similar products?

Step 2 — Ability to Execute: Are the skill sets and the experience to deliver the product technology present and available?

Step 3 — Risk: Have the key technical project risks been identified? How is a mitigation strategy prepared around the technology application?

Step 4 — Fit with Requirements: Does the application support the mandatory requirements and can it accommodate future requirements?

Step 5 — Return on Investment: can the investment be justified and is it affordable?

Making the right decision is therefore a function of evaluation across these five steps and therefore:

Right Result = References + Ability to Execute + Risk Assessment + Fit + Cost

Solution Details

Step 1: Referenceability

The surest way to understand whether a candidate technology will enable the successful launch is that it has demonstrably enabled the successful launch of a directly comparable product. Step 1 focuses on referenceability, including an independent assessment of existing technology platforms in the business ecosystem — determining whether reuse is possible (and considering the ability to execute and ROI criteria). Where there is potential fit, then the technology options are added to a short list for evaluation against known requirements in step 3.

Getting ‘under the hood’ is the early goal here. Seeing beyond the hype of vendor marketing is a necessary function in evaluating referenceability. Framing fundamental questions based on a visualization of the product is an important step to weed out options that are not viable.

Step 2: Ability to Execute

New digital product development is a multi-disciplinary process across business functions typically covering IT development, sales, marketing, product development, content production, interaction design, project management, finance, infrastructure management, vendor implementation services and technology vendor professional services. Determining who is responsible for what, organizing that into a plan and understanding whether all the resources are harnessed in the right way is an important factor in determining whether technologies can be implemented successfully.

A grid that covers the skills and capabilities required to deliver the product and identify the strengths and gaps in the organization to identify what partners need to bring to the table may be developed. Typical professional services required include project management, consulting and integration services and training associated with the implementation of the digital product itself. It is to be determined who provides these services, across how many organizations and how they are going to work effectively (Gartner, for example, recognizes that multi-vendor solutions and the ability collaborate represent the top risks of today in implementing IT-based projects).

Step 3: Risk Assessment

Typical project risks (such as cost, time and scope), and atypical project risks (such as the design of a content architecture and its modeling and behavior in a given technology) are assessed to capture relevant risks and the steps required to mitigate them during project delivery. Risks and their mitigations are presented in report form as a discrete deliverable and the assessment follows this process:

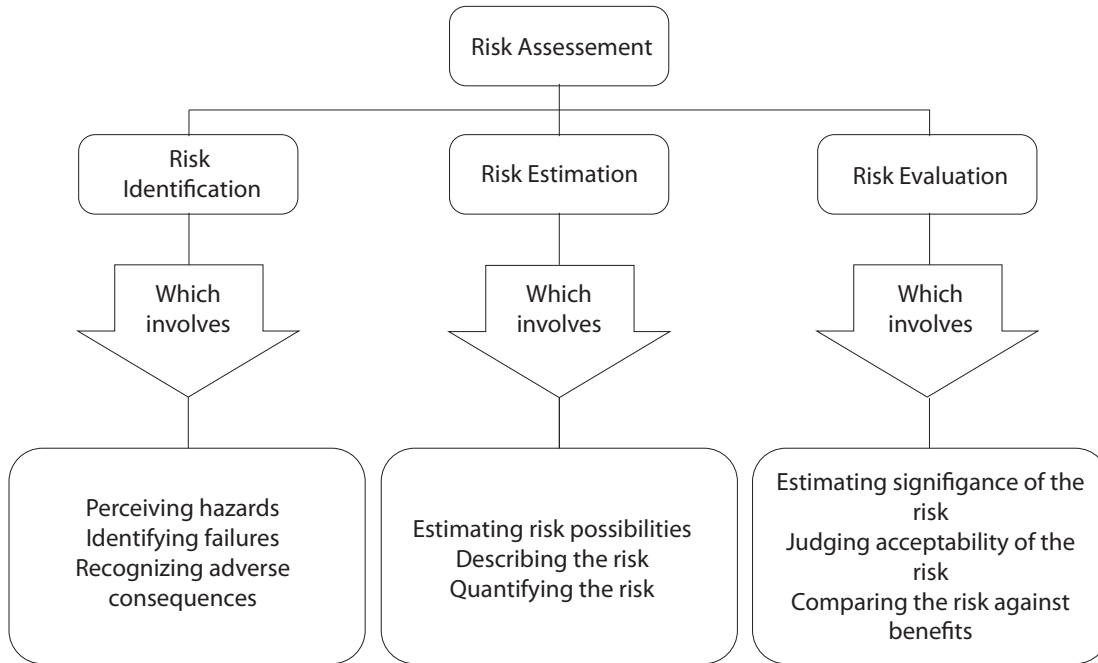


Figure 2: Risk Assessment Framework

Step 4: Fit with Requirements

There can be many ways to deliver a requirement and a requirement can change during delivery or as a given technology presents a different way to fulfill a requirement — especially when businesses are moving to more agile and iterative project delivery. Known requirements and outputs from software visualization are reviewed. A weighted scorecard to evaluating candidate technologies and project an objective view of best fit is developed.

At this stage, businesses typically lack the depth of understanding to take a requirement from a known, high level to one that evaluates a more meaningful consideration of candidate technologies ability to support a goal. Consider this evaluation matrix in Figure 2 above, which presents an example of a question aiming to get to the core of technology capability when considering content search flexibility and optimization. The initial requirement appears innocuous and the immediate response suggests a wide playing field for evaluation. However, the ‘under the hood’ question aims at narrowing the field:

In assessing how well the requirements fit the functional and technical requirements of the business, the following occurs:

- Develop a weighting scenario and assign weighting factors to each criterion for assessment.
- Construct a table to determine scoring factors and calculate weighted scores.
- Assign categories and further category weighting.
- Present objective outputs.

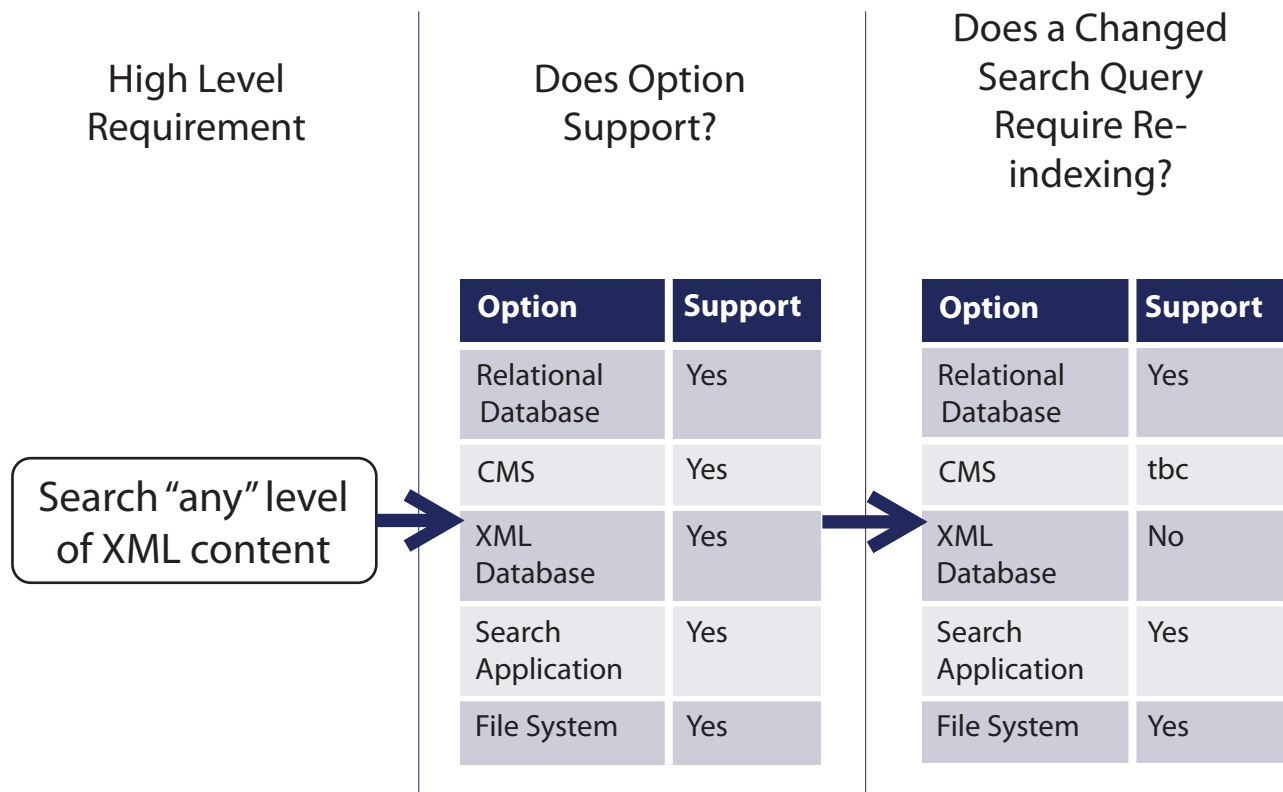


Figure 3: Sample Evaluation Question for a Key Requirement

Cost

Two presentation methodologies in reviewing cost and revenue, Net Present Value (NPV) and Benefit-Cost Ratio (BCR), may be used. As inputs, the following data points covering initial and ongoing cost are gathered:

- Term of assessment (years) and normally in a range of three to five and analytic horizon (n), and discount rate (r).
- Benefits – forecast sales and other revenue.
- Costs per year of analytic horizon, including purchasing and maintaining technology (license fees, maintenance costs) covering software and infrastructure / hosting, plus implementation costs (internal and external), and ongoing product support and enhancements, as well as related sales / marketing / adoption / other costs.

$$NPV = \sum_{t=0}^n \frac{\text{Benefits} - \text{Costs}}{(1+r)^t}$$

Figure 4: The NPV Calculation

NPV represents a clear go, no-go picture of a multi-year investment considering the time value of money. Aiming for NPV >1 in the analytic horizon year in line with business policies and using the formula.

Secondly, BCR, representing the ratio of total benefits over total costs, using business value for discounting, is assessed.

Timeline

To perform the assessment, review, and presentation of these five dimensions typically requires a six week timeline, with activities organized as follows:

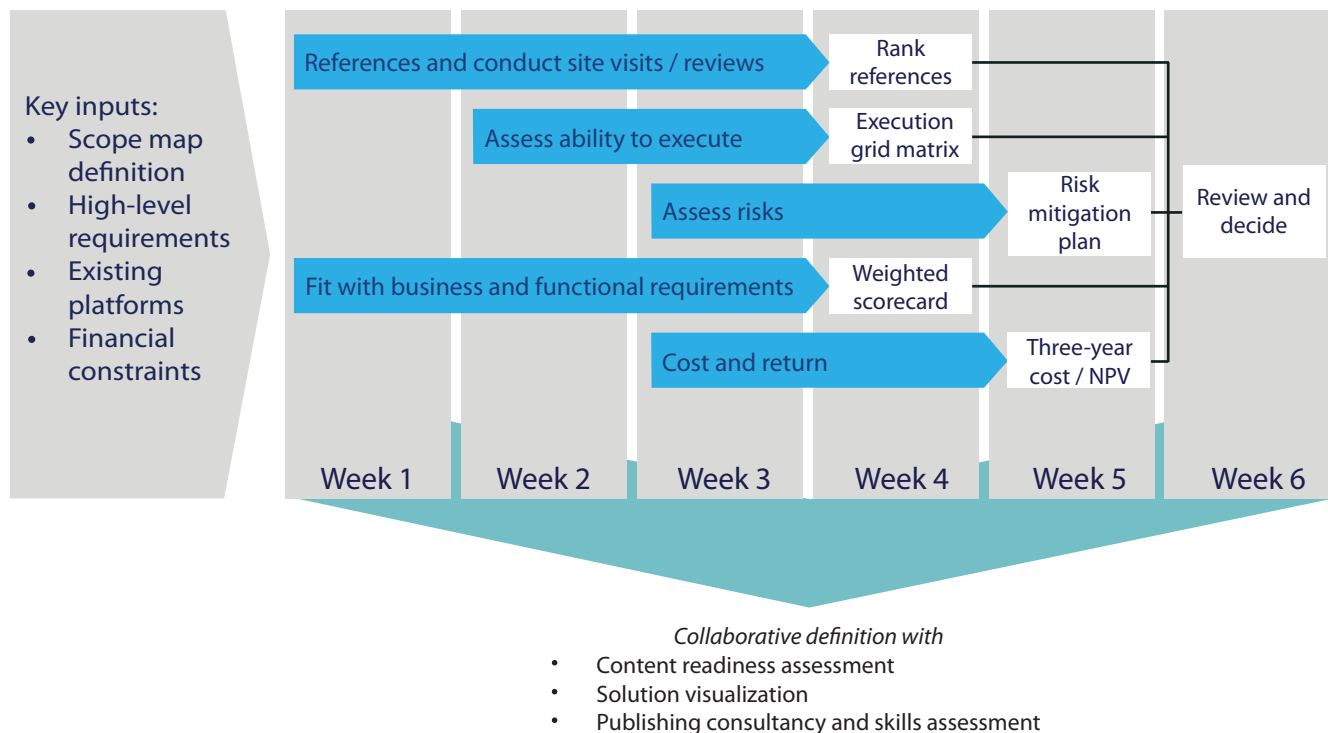


Figure 5: Technology Blueprinting Timeline

Business Benefits

Making a selection based on objective criteria always results in better decision making leading to:

- **Certainty** that technology decisions will deliver what the business wants, as well as the functionality required from the product itself.
- **Full Cost Awareness** that the costs (direct and indirect) are understood and planned for.
- **Confidence in the Ability to Execute** between in-house teams and implementation partners to deliver the product.

Following a structured and objective process will deliver:

- **Clear Decisions** that remove subjectivity, preference, or politicking from the choice made.
- **Alignment with Business Goals** so that an understanding of how technology will directly (and indirectly) enable business objectives to be met.
- **Knowledge** of technology pros and cons for the product, and the costs required.
- **Risk Avoidance** leading to an understanding of the issues and risks and associated plans to overcome them.
- **Agility** to move speedily into the next stages of the project.

Summary

The evolving content technology market, the complex ecosystem that is any business and the developing requirements of any digital product makes selecting the right technology a difficult decision. A structured Technology Blueprint methodology will greatly reduce the risk in the selection process while improving the quality of the decision. The risk of failure can be significant, from delay to complete product launch failure. We recommend that all businesses planning to launch new digital products should apply a structured methodology such as we have described here to that decision. The approach should cover all of the key dimensions of the technology impact and communicate the selection decision in a language that all stakeholders can understand.

When creating new online products, it is imperative that you not only determine the functionality that will exist within the product, but you also conduct a profiling of the content to determine how content is structured to support the required functionality, how it must be enhanced, converted or transformed and if its structure is agile enough to support functionality needs in the future.

A related *Print-to-Digital* Content Profiling methodology ensures that content will support product needs, a critical and often overlooked effort in launching on time and with success.

About Innodata

Innodata is a leading provider of business process, technology and consulting services, as well as products and solutions that help our valued clients create, manage, use and distribute digital information. Propelled by a culture that emphasizes quality, service and innovation, we have developed a client base that includes many of the world's preeminent media, publishing and information services companies, as well as leading enterprises in information-intensive industries such as aerospace, defense, financial services, government, healthcare, high technology, insurance, intelligence, manufacturing and law.

More Information

For more information about Technology Blueprinting, please visit www.innodata.com, call us at 201-371-8000 or contact us at solutions@innodata.com.

We also encourage you to read these other papers in our *New Product Development in a Print-to-Digital World* white paper series which you can find at www.innodata.com

- Solution Visualization
- Content Profiling
- Agile Content Development
- Progressive Release Management
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