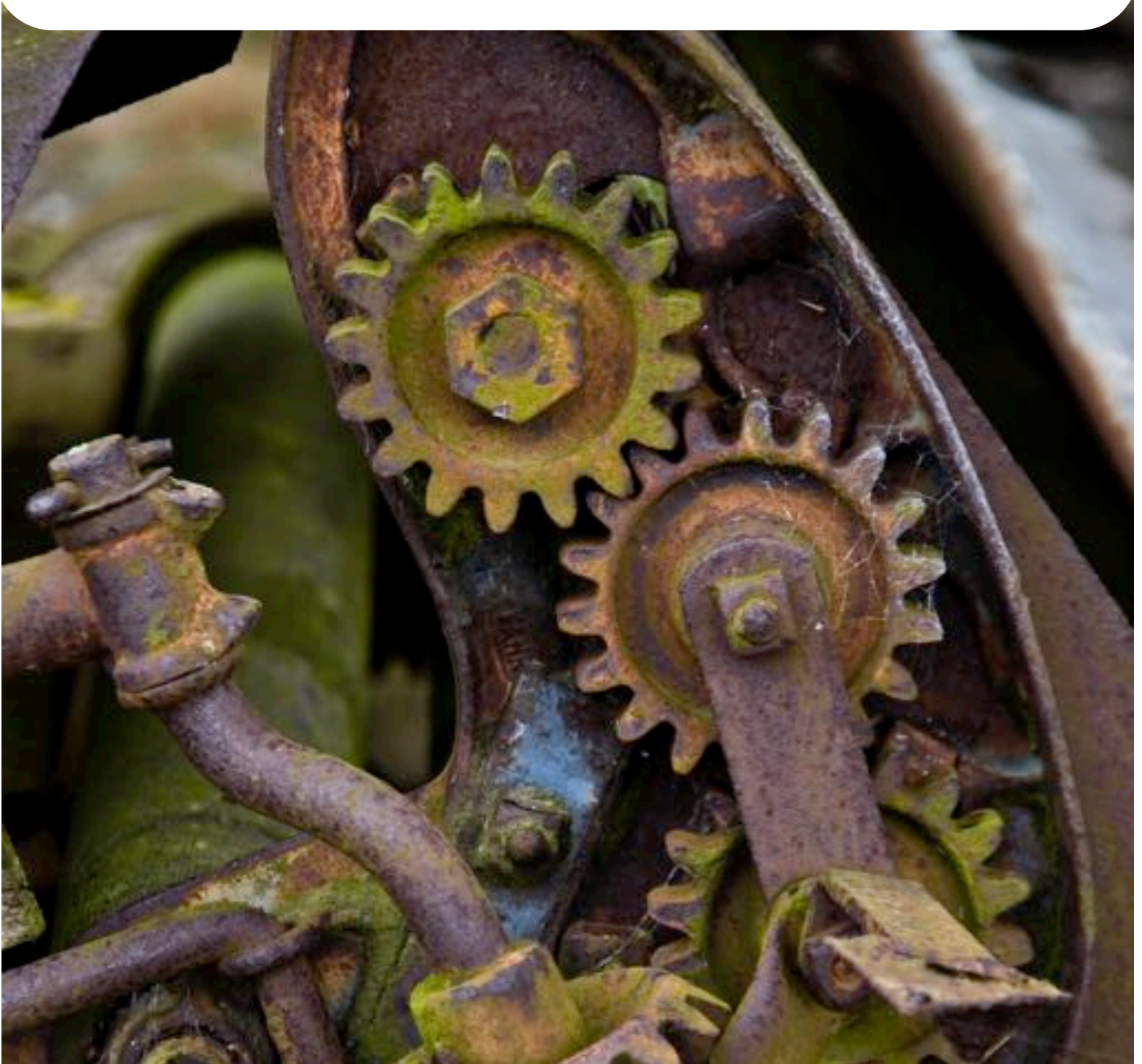


# Retail Legacy Systems: Assessment Considerations and Approaches to Modernization



## Legacy | leg•a •cy | /'legəsē/

*noun*: something transmitted by or received from an ancestor or predecessor or from the past; anything handed down from the past.

It is interesting to consider the definition of the word legacy, especially when it is so often used in conjunction with the foundational systems of traditional retailers who have been around for decades. The phrase “legacy systems” often conjures memories of green screens, ash-colored, boxy hardware, mainframes, DOS commands and even floppy disks – at least for those of us who have been around long enough to remember those environments.

Many retailers – especially those who began as pure brick-and-mortar shops – increasingly understand that their current technology environment no longer adequately supports their desired business vision. Despite the best strategic initiatives and promises of customer experience and omnichannel nirvana, many retailers are technologically hamstrung: trying to add modern, configurable and mobile tools on top of outdated and inflexible software.

Ultimately, to address these challenges and to remain viable and competitive, the following must be answered:

How long can a retailer continue to use and support existing solutions?

Is there a “burning platform” that demands investment in new technology?

What is the change “gulp rate” that the company can withstand?

Retailers that continue to maintain very outdated and cumbersome legacy systems do so not because they love their platform, but rather because they have not been pushed enough – yet – by the business environment or by technology needs to upgrade. Retailers tend to be more risk-averse and typically under-invest in new technologies relative to their peers in other industries. The “do nothing” alternative is often the path of least resistance...**to a point.**

There are a number of critical considerations around how to assess the current environment and then prioritize strategic IT investments so there is a clear roadmap that makes sense from business operations, resource and investment perspectives. In this Point of View, we will examine these considerations in detail.

## Understanding Legacy Environment Roadblocks

In our experience, many retailers face a combination of the following challenges, all to varying degrees:

- Existing systems that are antiquated, expensive and labor-intensive
- Extremely customized systems, built to support a retailer's unique requirements (not industry standard)
- Many point-to-point interfaces with specific data elements being passed individually
- No single version of the truth for data and reporting
- Master data is not "clean;" no governance process is in place
- System changes are costly, take significant time and risk compromising other functions
- Lack of inventory visibility throughout company channels and supply chain
- Latency of information updates, resulting in late decision-making, sub-optimized plans and allocations, inventory issues and negative consumer-facing impacts
- Extensive use of manual and form-driven business processes (i.e., Microsoft Excel or Access driven)
- To support current business needs, "one-off and creative" work-arounds are designed and implemented

Retailers must **assess their strategic vision**, take a broad look across the retail landscape and **understand their key business motivators** for legacy system modernization.

For companies facing these issues, it is necessary to take a holistic look at the technologies supporting their business and assess each to determine the best course of action and drive short and long term strategic capital planning.

We typically recommend that a retailer first assess their strategic vision, take a broad look across the retail landscape, and understand their key business motivators for legacy modernization. Examples of such drivers may include:

- Provide best-in-class customer experiences by leveraging existing brick-and-mortar stores in conjunction with enhanced digital capabilities
- Improve inventory accuracy and visibility both internally and externally to meet or exceed customer omnichannel fulfillment and service expectations
- Improve supply chain execution
- Link planning systems to executional systems for seamless data flow and accuracy
- Attract and retain exceptional talent by enhancing recruiting, onboarding, employee training, benefits and other human resources capabilities
- Mitigate risks of business continuity, data loss and / or security breaches

It is then necessary to contrast these business drivers against the company's legacy systems and existing business practices. A company should identify technology and process performance and execution issues to derive an understanding of the systems that are blocking key growth and optimization initiatives.

Additionally, we recommend performing a "gap analysis" between the existing processes and capabilities versus industry best practices to determine the high level

effort that may be required to achieve desired and leading competencies.

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At the end of this exercise, the company should clearly comprehend their position relative to their industry peer group and begin to understand the initial roadmap components to achieve their desired future

state. The ultimate goals should be the realization of desired business capabilities along with simplification of the IT architecture and application portfolio, while reducing operational cost and complexity – keeping in mind investment priorities and the company's capacity to absorb change.

Understandably, performing a comprehensive evaluation as we have just described across every department within a company – and in many cases across multiple banners – is a daunting task. To make this more digestible, a good way to start is to simply understand how well the current systems support existing and desired capabilities and growth in just a single business area.

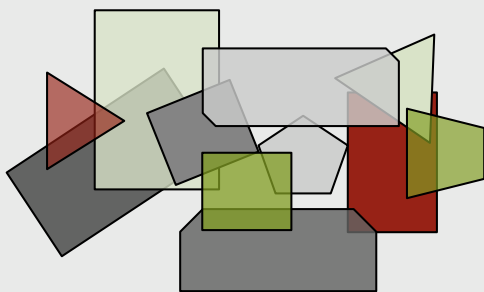
## Assessing the Current Technology Environment



### Retail Technology Landscapes

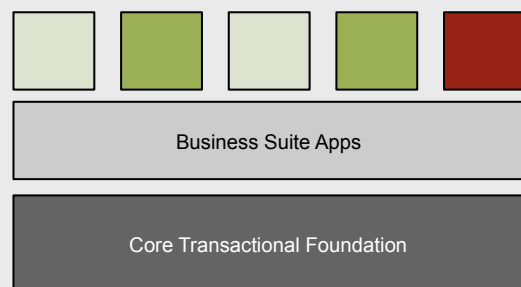
The first step of the process is to look at the composition of systems and software packages currently utilized within the business. Are existing vendors used across multiple departments? Are there a variety of “homegrown” solutions built to handle the complexities and intricacies of the day-to-day needs? Depending on the types of investments in software packages and the technology organization’s maturity level, there are many variations across the retail industry. We outline below the differences between retailers whose technology environment is disparate and unresponsive as opposed to those who are ready for today’s unified commerce needs – most retailers fall somewhere in between.

#### Disparate and Unresponsive



- Lack of core, foundational solution
- Many point-to-point interfaces
- Costly and / or limited availability of necessary skills and resources

#### Ready for Unified Commerce



- Single core solution as a foundation
- Integrated suite from one or few vendors
- Standard technology / architecture
- Minimal custom applications except for true differentiated capability areas

In our experience, most retailers are deploying one of three general technology environments – each with associated pros and cons:

Approach	Pros	Cons
<p><b>Point-to-Point / Best of Breed</b></p> <p>Select a series of software packages with the strongest functional fit for each business function – many best-of-breed applications integrated on top of one another, sometimes including homegrown applications</p>	<ul style="list-style-type: none"> <li>• <i>Can provide leading edge functionality</i></li> <li>• <i>Strategic applications may enable competitive advantages</i></li> <li>• <i>May have higher influence with vendor(s) for additional functional enhancements</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>May indicate lack of an overarching IT strategy</i></li> <li>• <i>Requires more customized application interfaces</i></li> <li>• <i>Higher IT total spending for integration</i></li> <li>• <i>Potential for lower overall application stability</i></li> <li>• <i>End user streamlining may be more difficult, requiring multiple package interfaces</i></li> <li>• <i>No single version of the truth</i></li> </ul>
<p><b>Single Vendor Integrated</b></p> <p>Select the single vendor package with the most reasonable combined functional fit for each business function</p>	<ul style="list-style-type: none"> <li>• <i>Software acquisition and negotiation with one or a few vendors</i></li> <li>• <i>Single vendor for troubleshooting problems</i></li> <li>• <i>Easier business expansion for both growth and omni-channel</i></li> <li>• <i>Single cohesive database of information</i></li> <li>• <i>Simplified application upgrade cycle</i></li> <li>• <i>Prepackaged integration</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Reasonable, but possibly not best, business functionality in many areas (i.e., 80% fit rule)</i></li> <li>• <i>Functionality upgrades prioritized by a collective user group</i></li> <li>• <i>Initial implementation often slower, hampered by enterprise considerations and business process impacts</i></li> <li>• <i>May require placing current business initiatives on hold</i></li> <li>• <i>Requires ERP experienced IT management teams and business subject matter experts</i></li> </ul>
<p><b>Hybrid</b></p> <p>Select the core information system from a single vendor, while selecting a few specialized business applications from other vendors (e.g. Planning, Replenishment) to address unique key business needs</p>	<ul style="list-style-type: none"> <li>• <i>Software acquisition and negotiation focused on one or a very few vendors</i></li> <li>• <i>Specialized applications are more leading edge</i></li> <li>• <i>Easier business expansion for growth</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Some reduction of ideal business functionality</i></li> <li>• <i>Requires some customized application interfaces</i></li> </ul>

As expected, there is no “one size fits all” approach – many factors must be taken into consideration when determining the best method in any retail environment, including:

- Ability / desire to leverage best practices for a specific retail segment
- Defined IT budget and investment level
- Company’s ability to absorb change (both business and technology)
- Diversity of existing and desired skill sets
- Strength of an IT architecture governance model
- Supporting program management capabilities



### Homegrown Solutions

Perhaps surprisingly, there are ample stories of retailers continuing to operate on legacy systems developed in-house, often referred to as “homegrown.” These systems, which once may have been state-of-the-art, are typically at or beyond their useful life and contribute greatly to hampering growth and minimizing the ability to achieve other strategic objectives. We have experienced homegrown systems that:

- Do only the bare minimum in supporting current business capabilities
- Necessitate laborious work-arounds
- Are difficult to effectively integrate and require expensive hardware
- Create substantial data issues
- Have significant performance issues due to increased demands
- Require specialized, scarce and expensive skill sets to maintain
- Lack the features and functionality necessary to support growth
- Rely on multiple versions of the truth

Why are these systems still so prevalent? Retailers are not only notoriously hesitant to invest in newer technologies, but they are also traditionally very wary of change. Further, the expectation of investing several million dollars on new solutions and overhauling their existing IT organization – and likely other areas of the business as well – is unnerving.

Additionally, there is the question of return on investment. Often, replacement of homegrown systems must start with core foundational elements, such as finance and

Many retailers are reaching the point where **continued use of homegrown legacy systems is no longer sustainable** if they hope to remain competitive.

master data, which typically have low ROI expectations – that is, not tied to direct top-line impacts like sales or margin improvements.

However, these investments are essential for setting the stage for future high-value initiatives. Ultimately, many

retailers are reaching the point where continued use of homegrown legacy systems is no longer sustainable if they hope to remain competitive.



## Packaged Solutions

While homegrown solutions primarily require looking internally at the available support resources, a packaged solution necessitates consideration of some bigger factors:

- Is the vendor’s business growing, shrinking, still operating, or has another company acquired the vendor?
- How many existing and new clients are using the solution year over year?
- How much is the vendor spending on R&D on that specific product and in retail?
- Is the vendor offering, or planning to offer, cloud and hosted models which may allow more flexible investment and deployment options?
- How strong of a user group community does the vendor support?
- Has the vendor continued to evolve in line with the company’s business direction?
- Is the vendor’s architecture in line with desired technology standards?
- Has the vendor been a true “partner” – after the initial sale and implementation?
- Does the application and vendor fit into the company’s culture? Are they easy to do business with?



A strong vendor with positive answers to the above questions typically incorporates best of breed industry practices and technology in their solutions and will likely be a good partner with whom to move forward.

Solutions from a shrinking, disengaged or out-of-business vendor are likely candidates to be evaluated for replacement. Normally, undesirable responses to the above questions indicate that other retailers have moved on to a vendor and / or solution that provides better functionality, services, cost, support or some combination thereof. For solutions that have been acquired by or merged with another vendor, then a similar set of questions should be posed for the new company.



### Business Functionality and Upgrade Paths

Any viable vendor should show signs of evolving their solution appropriately to the market. Every company is different, and it should not be an expectation that any “out of the box” functionality – including upgrades – will align perfectly with all desired processes and intricacies. Ideally, a solution should align with the direction of the business and require only minimal enhancements.

On the other hand, if neither the current vendor nor other vendors are aligning with a retailer’s desired business processes and technology approach, then the company should determine if the process changes required by the software package are industry best practices and would provide efficiencies and enhanced value realization from the solution, if adopted. Alternatively, most existing viable vendors will work with a company to determine the cost of changing a base packaged solution to meet current needs. Either way, it is wise to involve experts – outside of the solution vendors – who clearly understand the industry from both business and leading practice perspectives, who are knowledgeable about the current solution landscape, and who also do not have a bias towards any particular vendor or system.

A solution should **align with the direction of the business** and require **only minimal enhancements.**

With every vendor, there should be a three to five year roadmap for what they expect to develop as new functionality, features, processes, user interface, etc. In looking at the

upgrade path and ensuring it aligns with the business direction and needs for the next three to five years, the following questions should be addressed:

- How long do current licenses and services extend with the vendor?
- What does the upgrade path look like and cost over the next 5 to 10 years?
- Is the vendor's application and technology approach on a path that aligns with the retailer's desired direction and incorporates industry leading practices?
- Does it appear like the vendor will continue to be in business 5 to 10 years?

Depending on the size of the vendor, they may not be around for the upgrade path, given the current cadence of solution vendor mergers and acquisitions. That being said, any vendor's upgrade path should stay fairly consistent with the marketplace; and expecting those upgrades and new functionality is acceptable. One must also consider the associated costs with most upgrades: there is typically the upfront investment in licensing and the implementation, as well as the ongoing costs of support and maintenance similar to many legacy environments. Furthermore, newer Cloud and software-as-a-service (SaaS) solution architecture and pricing approaches have muddled the waters, as on-premise solutions are nearing the end of their supported lives and licensing costs for hosted solutions are typically spread over the life of the contract, as opposed to being upfront.



## Hardware and Architecture

Another key component in evaluating a legacy system environment involves the hardware and architecture that supports the software. Questions focus on assessing the ability of these existing components to handle continued business growth, as well as consideration of migration to off-premise models:

- Does the current hardware support the company's data requirements?
- Does the hardware environment provide performance scaling and growth?
- Can it be expanded to support additions or upgraded easily?

- Is the current hardware on-premise and is the company's technology direction leaning towards Cloud or SaaS based systems?
- Is the integration plan clear, concise and supportive of additional integrations or will more and more point-to-point interfaces continue to add to an already complex environment?
- Is there enough data storage available in the production system to allow for continued business growth?
- Do any systems provide archiving to allow for more data storage? If so, how many years does the archive store provide?
- Does the system support appropriate data and system security requirements?
- Is there a solid disaster recovery plan in place for all systems?

The hardware sizing and architecture questions can lead to many more based on the size and structure of the business, IT team, and hardware / architecture group. In today's IT world there are many resources to allow an onsite data center, outsource servers or work with software via Cloud-based services and other off-premise models.



## Resources, Support and Changes

We next need to look at the resources required to support the current solution set (for both packaged and homegrown systems), including hardware and architecture, moving forward. A few questions to consider here:

- Are there enough existing resources within the company with the correct skillsets to efficiently support the software?
- How much is support reliant on external (expensive) resources?
- Are these skillsets viable for the remaining life of the product / solution?
- How many of the resources are likely to leave the company due to retirement or other attrition?

We can then look at the types and how many resources may need to be hired to handle current and anticipated workloads, including time to train and develop the new staff. We also must consider the level of anticipated changes required to support the business' growth and strategic objectives.

- How easily can the code be altered and further customized, including data and interface requirements?
- Are existing resources capable of making the changes to the code?
- Is a vendor or specialist required to do any changes?



## Total Cost of Ownership

Estimating costs for all of the software, hardware and services will help comprehend how much is spent annually, plus allow for anticipation for expected costs in future years. Major costs that should be considered include:

- Annual license or subscription fees
- Vendor support fees
- Hardware maintenance and upgrades
- Software upgrades and end of life
- Staff to support software and hardware
- Support staff development / education
- System and data security

A comprehensive total cost of ownership (TCO) should be developed and maintained on an ongoing basis – as new solutions are implemented, old systems are retired, and architecture and resource changes are made – to ensure the company understands the entire financial impact of its technology spend and can then better comprehend the ROI of new solutions.

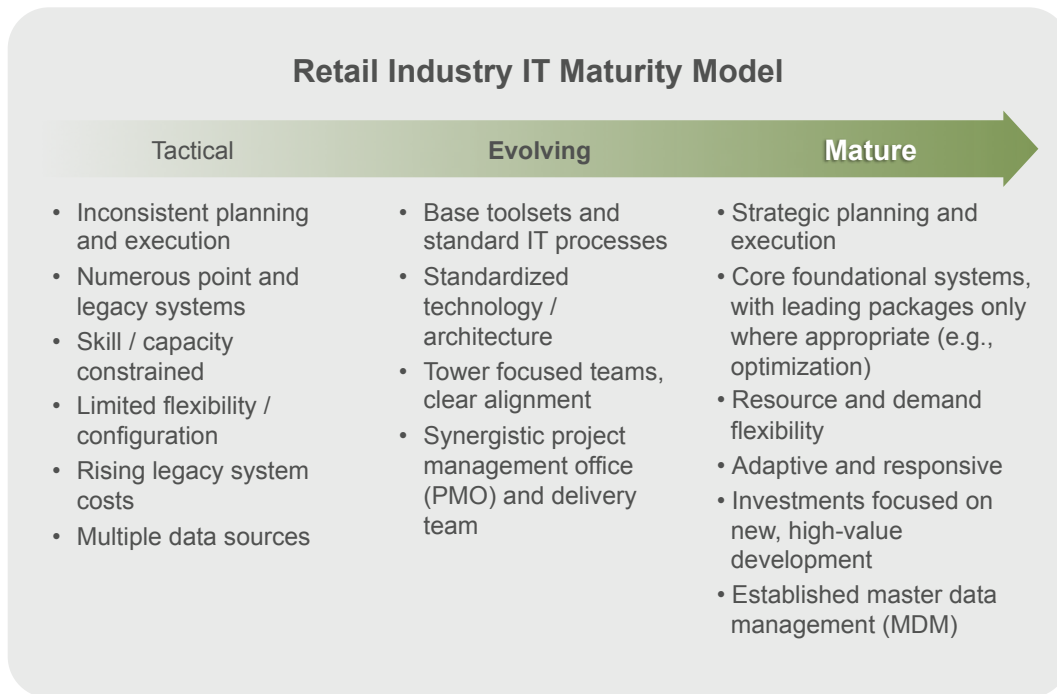
## Driving Factors for New Solutions

With the above considerations in hand, a retailer is positioned to determine the path forward, and if indeed new applications and architecture changes are the best direction for the company. Driving factors include:

- Current software no longer adequately supports the business, growth plans and / or strategic objectives
- Performance or scalability issues severely hamper needs of the business
- Existing technology is at or near end of life
- Data integrity issues are rampant

- Support and / or hardware costs continue to climb
- Hardware continues to need costly upgrades
- Security concerns are not adequately mitigated

Another good gauge in understanding where a company is relative to the strength of their application portfolio and whether or not new solutions are needed is to use a **Retail Industry IT Maturity Model**. This tool allows a retailer to review their enterprise overall or a specific functional process area and, using a basic rating system, evaluate where they are on a spectrum of a tactical technology environment to one that is more mature. It is unlikely that any retailer will be at the strongest end of the continuum for everything, so it is important to be realistic, but also to understand which functional areas are the highest priorities for the business.

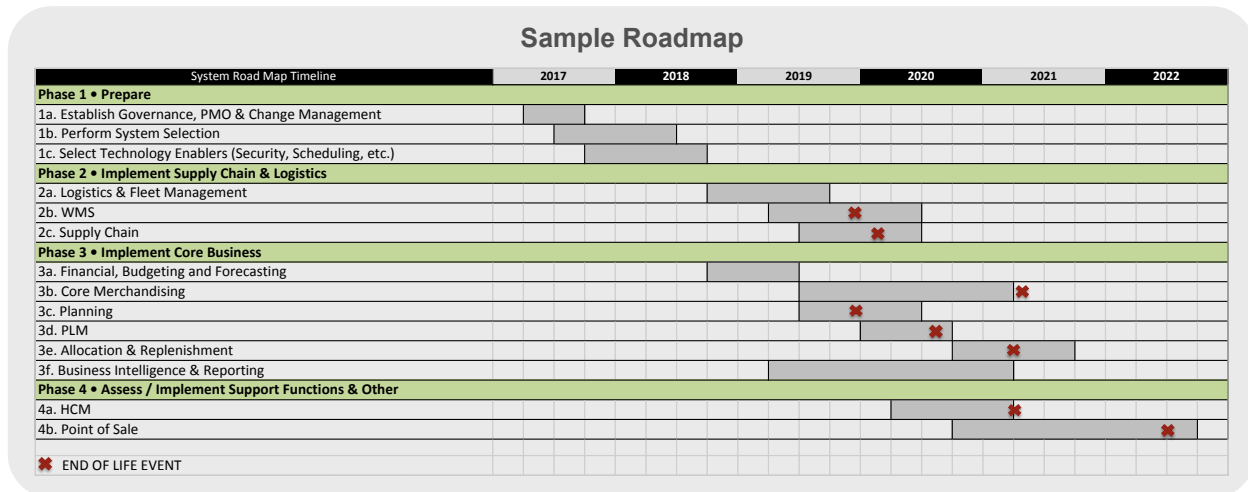


## New Software: Roadmap and Approach

When assessing investments in multiple systems, there are not only business drivers, as mentioned earlier, but also systemic dependencies to consider. A key consideration is the sequencing of new systems. For example, does master data need to be “fixed” and stabilized as the foundation for new features and functions? Does planning come before foundational systems?

How long can we  
**continue leveraging  
existing solutions**  
and remain **viable and  
competitive?**

This is where the development of a roadmap – understanding the company’s biggest technology hurdles, strategic direction, dependencies, “burning platforms” and other investment priorities – comes into play. Essentially, answering the question: How long can we continue leveraging our existing solutions and remain viable and competitive?



Developing the roadmap helps the company clearly understand how they will move from their existing legacy environment towards a more strategic technology platform. It helps manage expectations on sequencing, as well as rationale and options for timing. This serves as an initial input to investment prioritization / capital budgeting, resource deployment needs and change management activities. For each system under consideration, a high-level business case must be developed to assess the required investment and expected return (ROI). This should take into consideration existing costs that will no longer be required as systems are sunset, as well as an understanding of concrete benefits. Understanding the ROI drivers for each system also impacts

roadmap sequencing decisions and the company's appetite for capital expenses versus ROI.

Recognizing that the development of the business case is sometimes difficult prior to going through a full package selection process, we again advise leveraging the

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experience of an objective third party who can provide insights into "real" costs and benefits. Relying on solution vendor sales pitches and collateral will typically result in portraying an unrealistic picture of costs and ROI.

Once the roadmap is defined and accepted, the company can then begin the process of selecting new systems. In another Parker Avery Point of View "[Software Selection: Creating a Strategic Approach](#)," we discuss the critical elements for selecting the software package itself, including:

- Criticality of decision makers
- Business requirements definition and prioritization
- Fact-based evaluation
- Vendor and team preparation

Along with these considerations, we recommend developing a short list of vendors who are perceived as leaders in the solution space, who are in line with the company's business direction and whose solution set shows strong evidence of best supporting strategic drivers. Here is another instance where having an objective, outside opinion on the industry solution leaders is invaluable in streamlining the evaluation process, as well as injecting "insider" information that is not available from trade shows and vendor marketing propaganda.



From there, companies should ask for a Request for Information (RFI) or a more detailed Request for Proposal (RFP) from each vendor. These should be strongly based on business requirements, architecture components and costs. This will ensure an understanding of how well each vendor is in line with the company's business and technology direction. Digging deeper into the assessment of solutions that appear to

meet requirements in the RFI or RFP, a company should be prepared to conduct detailed, scripted demonstrations, comprehensively understand each vendor's architecture, closely examine the total cost of ownership and benefits, as well as conduct reference calls with clients who are not only using the solutions proposed, but also are ideally in the same industry. Key leaders from both IT and the business must

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Indeed, selecting a new solution to replace one that has been "tried and true" is no small task. However, when considering

strategic – and often disruptive – technology investments, with the opportunity to significantly improve a company's business processes, efficiencies and competitive capabilities, it is wise to invest the time and resources to ensure the very best solution is identified.



## Final Word

Acknowledging the demise of existing legacy systems and determining the need for new software is admittedly a challenge – especially if considering an entire technology portfolio. Retailers have been using older systems for many years because they have historically supported the business quite well. However in the ever-changing and growing world of omnichannel, e-Commerce, multiple fulfillment options and the velocity of enhanced customer expectations, many retailers can no longer continue to efficiently operate on their existing systems and remain competitive – or even viable.

It is a wise exercise to scrutinize existing legacy systems, including applications, hardware, resources, support structure and costs, and understand how well – or not – they support the business now and in the future. This knowledge will result in a workable plan for modernization that will not only address a retailer's capacity for investing in new systems, but also result in a much better ability to support the business strategy, directives and enabling capabilities for years to come.

## The Parker Avery Group

The Parker Avery Group is a boutique strategy and management consulting firm that is a trusted advisor to leading retail brands. We combine practical industry experience with proven consulting methodology to deliver measurable results. We specialize in merchandising, supply chain and the omnichannel business model, integrating customer insights and the digital retail experience with strategy and operational improvements. Parker Avery helps clients develop enhanced business strategies, design improved processes and execute global business models.

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