Maximizing Supply Chain Value

Comparing Total Cost of Ownership
Among Warehouse Management System Platforms
Executive Summary

Migrating to a more robust warehouse management system involves myriad technology and financial decisions. The assumption behind running after the latest bleeding-edge technology is that it must be more powerful, more efficient and less costly than everything that preceded it. Not so fast. Although “new and improved” may be included on product labels, “new” doesn’t always include “improved,” especially when it comes to costs. Any experienced Finance leader looks beyond the initial proposal price to find out the true ongoing costs of a platform decision.

How much will a given platform cost per user? How reliable is the platform? Are all the components I need included or are additional purchases required? How quickly can we install this platform compared to the alternatives and how can we be sure that this platform minimizes our costs? As part of your decision-making process, this white paper separates hype from reality and provides straight answers on the platform that provides the best long-term value.

Platform Pros & Cons

The scope of this comparison will include three broad platforms: Intel-based Windows servers running Microsoft Windows 2000 and Windows NT Server; Unix servers running variants of the Unix operating system, including Linux; and IBM’s Power 6 platform.

Developed in the open-source community for hobbyists, Linux is a relatively new Unix-based entry in the platform category. Although the siren song of “free” distribution sounds appealing, enterprises learned that the support required for mission-critical systems came with a dramatic price increase. And the difference between quick response from company-trained, professional support personnel and an answer the next day from a public blog the
next day reflected the true hidden long-term costs associated with the Linux platform. When you include support costs from outside companies, outage costs per employee and overall reliability into the true TCO and Unix becomes a less-than-attractive solution.

With its foundations also geared toward consumers, Windows has worked hard to make inroads with businesses. While Apple’s commercials continue to remind us of Windows’ notoriety for system crashes and cumbersome interfaces, the reliability of Windows has improved over time. In fact, Windows-based platforms have been successful in smaller businesses and in applications that do not require ultra-high availability. Microsoft also offers a family of products such as databases and security software that can be purchased in addition to its operating system. The total cost of all these components needs to be included in the initial and ongoing cost comparison, though.

IBM is known for business-class, enterprise-level systems engineered to run a business. While Windows was associated with “the blue screen of death,” IBM was known for their “Big Iron.” While the size of the iron has diminished over time, with prices following suit, the iron-clad reliability has remained constant. The initial investment in an Power 6 platform may be slightly higher compared to its counterparts, but a comprehensive view of prices provides some of the valid reasons for the enduring popularity of the Power 6 platform.

**Determining TCO**

Beyond the initial purchase price, a number of associated costs also need to be included in determining the true total cost of ownership:

- Staff time required for deployment
- Lost productivity of both end users and support staff due to unplanned outages
- Additional components that need to be purchased in order to provide a comprehensive solution
- The long-term costs of each platform

Let us begin by looking at the ease of deployment for each platform.

**Evaluation of a business-class platform for your WMS should note that only the Power 6 was built on a foundation of serving business audiences.**
Deployment Time

According to The Meta Group¹, two of the three platforms take longer to deploy than estimated, while the other actually takes less. With a Unix implementation, 10 hours are estimated for deployment and it usually takes 13 hours to complete. On a Windows platform, a more robust 12 hours are estimated, while it usually ends up taking 14 hours to deploy. With an Power 6, only six hours are estimated and it usually ends up taking less than that, averaging four hours. Compared with both Windows and Unix platforms, an Power 6 solution requires 70% less time for deployment.

System Availability

Once the solution is in place, we need to consider how often server downtime will occur. According to The Gartner Group¹, Unix-based platforms see an average of 23.6 hours of unplanned outages per year. A Windows-based solution will include 224.5 hours of downtime per year, almost 10.8% of the year. Unplanned outages on an Power 6 solution average only 5.2 hours per year, 78% better than the Unix solution. Converting from Windows to an Power 6-based solution decreases your unplanned outages on average almost 98%.

Staff Productivity

When a system is unavailable, the costs associated with lost productivity need to be tracked for both support personnel and end users. According to The Meta Group¹, lost productivity in salary costs of support personnel at $20 per hour on the Power 6 are the lowest at only $104 per year. Unix costs $472 per year, while Windows costs are the highest at $4,490 per year.

According to IDC², for every 100 users, a Unix-based platform delivers 6,344 unplanned downtime hours per year. At $20 per hour, that’s $126,880 in lost productivity. Implement an Power 6 solution and your costs drop over $100,000 to $24,700. Consider a Windows

A platform upgrade must produce quantifiable improvements in staff productivity and system availability while reducing the overall cost to the business.
platform and budget a hefty $405,000 per year for lost productivity.

Additional Components
Upgrading to an improved warehouse management system should be as seamless and simple as possible. However, additional costs and complexities arise when the database, security and communications software, integration, upgrades and vendor support are not included with the WMS. Does the burden fall upon one group (or one person) within an organization to find perfectly integrated components and keep them all working together? When components don’t work as they should, are they in the middle of a finger-pointing contest between vendors?

These additional components and complexities are part of the hidden costs with both the Unix and Windows platforms, affecting your overall productivity. With an Power 6, all these components are included with the platform. Seamless integration from a single business-class vendor. Nice and simple, with no finger-pointing.

Total Cost of Ownership
Considering the true total cost of ownership (TCO), IDC\(^2\) determined that in both small and large companies, the results were consistent over both three and five year-timeframes. In large organizations, over a three year period the Windows-based platform cost 45% more than an Power 6 solution and the Unix-based platform costs were 58% higher. Measure the costs over a five-year timeframe and Unix was still 58% more than an Power 6, while the costs of operating a Windows-based system ballooned from 45% to 72%.

Even in small organizations, IDC’s research showed the Power 6 to be the best value by far. Over a three year-period, the Windows-based solution was 34% more than the Power 6, while the Unix-based solution was 60% higher.
Over a five year period, the cost differences were even more pronounced: the Unix-based solution was 91% more expensive, while the Windows-based solution was 95% more expensive. These numbers are confirmed also by IBM’s Scorpion Group\(^3\), who found that the Power 6 always had the lowest annual operating costs and the lowest cost per unit of work done.

**Conclusion**

Upgrading your warehouse management system involves a number of technological and financial decisions. From all perspectives, the Power 6 is shown time and time again to deliver the greatest value at the lowest possible cost. The Power 6 is a business-class platform with a quicker deployment time, higher availability and overall user productivity. All the necessary components are included and if support is required, immediate business-class support is available.

Although the Power 6 has proven its value to businesses worldwide year after year, the capabilities continue to evolve. Secure connections to your Power 6 applications can even be accessed from both your iPod\(^4\) and iTouch phone. Proven over time, evolving to meet business needs today and into the future. The smart choice in platforms is the Power 6.

**About Codeworks, LLC**

Since 1995, Codeworks has helped Third-Party Logistics providers grow their logistics business and exceed diverse customer expectations. More than just a software provider, we are a 3PL business solutions specialist, offering business consultation, comprehensive software solutions, seamless integration, training and ongoing support to clients nationwide. Every day, our solutions process tens of thousands of orders, ship many tons of freight and manage millions of square feet of warehouse space.

We also make it easy for our current and future customers to keep up-to-date on industry news, trends and tips with our quarterly
e-newsletters, delivered right to your Inbox. Timely and concise, it’s just what you’d expect from a true business partner.

Codeworks offers web-based demonstrations of our products from the comfort of your office. We welcome the opportunity to discuss how we can help optimize your operation, substantially improve your competitive advantage and deliver the capability to win new business.

Works Cited
1“Independent Research: IBM Power 6 vs. Windows NT”
http://wintouch.com/Power 6-tco.htm

2“Server Cost of Ownership in ERM Customer Sites”

3“Power 6 Best in TCO, Studies Show”
http://systeminetwork.com/node/21683

4“Connect to IBM Power 6 Server with iPhone and iPod Touch”