

A New Market Index for a Technology Economy: The Technology Leadership Index

Abstract: Rubin Worldwide's ongoing technology leadership stock index demonstrates that firms that place technology at the center of their business strategy show higher growth than traditional industry indices.

Introduction

Traditional indices such as the Dow Jones Industrial Average (DJIA) or the Fortune 500 focus on top performers without any considerations other than their market capitalization, share price, revenue, or other 20th-century measures of business performance. The key indices used today are based on lagging indicators that do not help assess business potential.

Many firms view technology as a necessary evil, a cost of doing business. However, some firms view technology as a strategic lever, a tool to drive new business growth, protect revenue, reduce business costs, and manage risk. The hypothesis proposed by the Technology Leadership Index (TLI) is that strategic investment in technology is a leading indicator of market performance.

Between 2008 and 2009, IT investment suffered a global slowdown. The recession led many CEOs to believe IT was one of the main cost pools that could safely be reduced without impacting a firm's overall performance. As a result, IT spending decreased by 2.6% between 2008 and 2009 in the US¹. However, the Technology Leadership Index demonstrates that firms which adopted a different approach seem to have fared better than their peers.

Technology leaders are not only limited to companies that produce and commercialize technology products and services but also include companies that position technology as a strategic asset and rely on technology to improve business efficiency. The TLI tracks the indexed market capitalization of more than 300 leading technology firms in 21 different sectors², vis a vis their original 2006 value and the Dow Jones Industrial Average, the Standard & Poor's 500 (S&P500), and the Fortune 500.

Results

From January 2006 to December 31, 2010, the TLI has consistently outperformed the S&P500 and, since the beginning of 2010, has begun to surpass the DJIA. Since the beginning of the study, the TLI has averaged a 1.2% difference in value from the DJIA, 6.7% from the S&P500, and -2.3% from the Fortune 500. These results highlight the importance of strategic technology investment in business performance and imply that technology leaders have overcome the hardships of the economic crisis faster.

¹ Gartner Report: IT Spending 2010

² Company Details: <http://www.rubinworldwide.com/chart/companies.php>

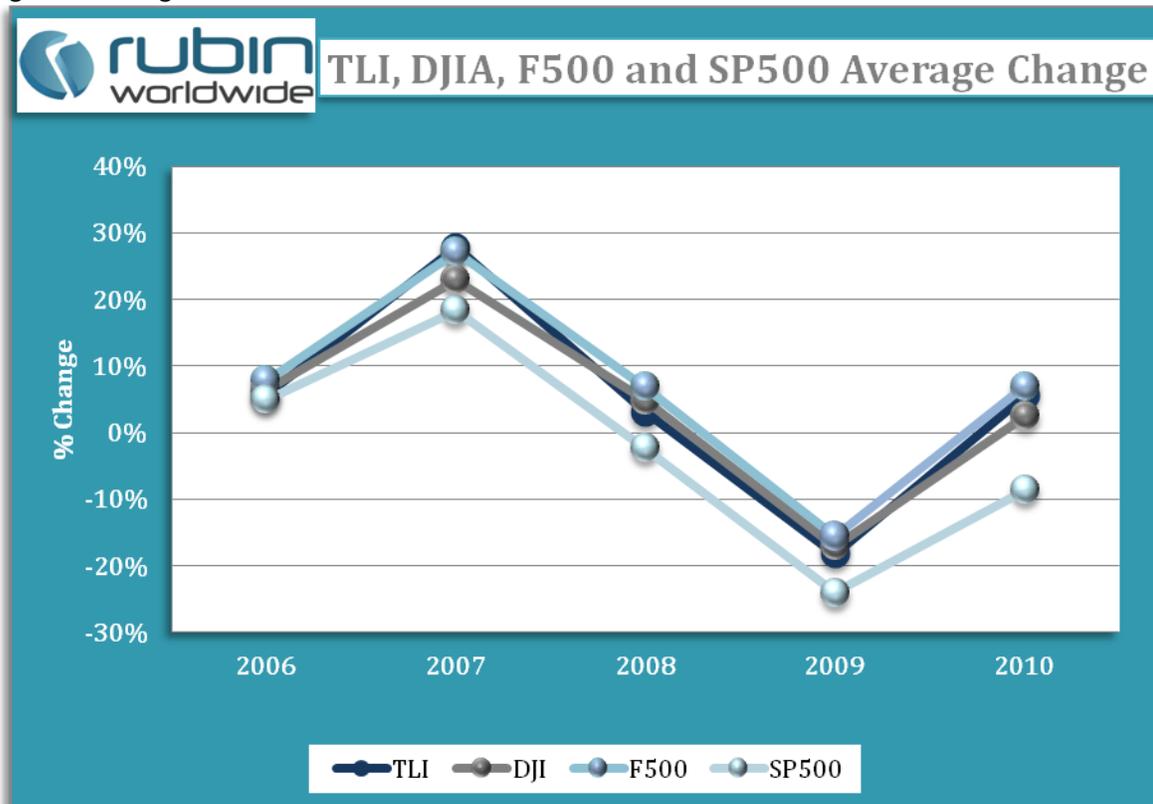
Consistently outperforming the S&P500 and outpacing the DJIA in 2010:

The TLI has outperformed the S&P500 by, on average, 0.6% in 2006, 9.8% in 2007, 5.2% in 2008, 5.8% in 2009, and 14.5% in 2010. In addition, the TLI gained the upper hand on the DJIA in 2010 by 3%. These results can be explained by two trends that are closely correlated to the impact IT investment has had on the performances of technology leaders.

First, technology leaders seem to have shown a greater resistance to the economic crisis than the S&P500, with a difference of -22.2% compared to -27% for the S&P500.

Second, the TLI seems to be overcoming the crisis faster, showing a 5.6% growth in 2010, while the DJIA achieved 2.4% growth and the SP500 decreased by -8.6%. The F500 is the only index which performed better, with 7% growth. This demonstrates that in times of economic downturn, the competitive advantage obtained by technology leaders enables them to be more agile than their peers. Firms that have maintained a constant level of IT investment are rebounding faster than their peers, and are thus better positioned to grab the opportunities of the recovery.

Figure 1: Change in Index Values: 2006-2010



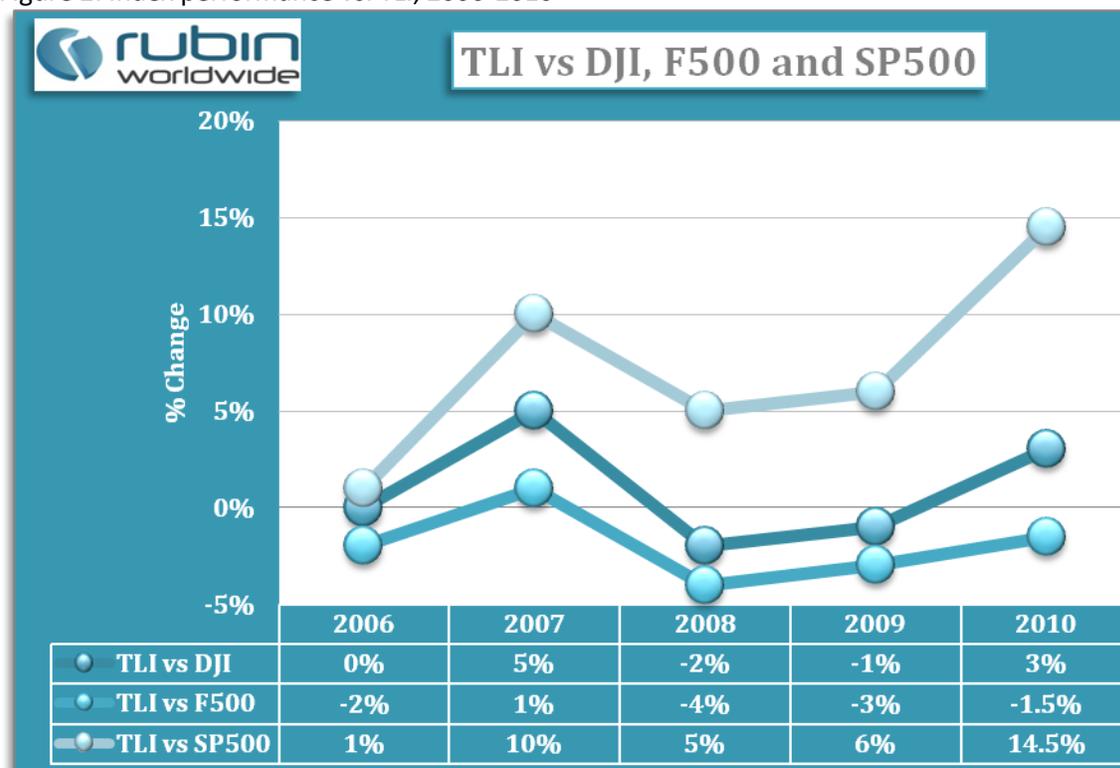
Outperforming the F500 in technology and non-technology related sectors:

In some sectors, the TLI has steadily managed to outperform or be on par with the F500.

Predictably, between 2006 and 2010, the TLI has generated, on average, more value than the F500 in technical sectors, such as information technology (+6.7%) and construction and engineering (+36%). In addition, the TLI and F500 have been on par in the manufacturing sector with an overall difference of 0.3% in favor of the TLI, as well as in energy and utility (-2%).

The TLI has been particularly strong in the financial domain, outperforming the F500 by 5.2% in the insurance sector and by 4.1% in consulting, and has demonstrated equivalent performance in the banking and financial sector (-0.4% difference). This indicates that IT investment provides an enhanced competitive advantage in sectors that are particularly data intensive and require tailored, customer-centered services. Even more interesting is the fact that in the heart of the economic recession this sector was under considerable pressure to reduce IT spending. However, the TLI demonstrates that firms that decided to maintain a greater level of IT investment have not only remained competitive but even outperformed, and continue to outperform their more conservative peers. This helps demonstrate that IT is more than a cost to be cut down during difficult times. IT is a key driver of business success, even when the economy has slowed. Sustained IT investment generates competitive strengths such as an enhanced customer relationship via effective database management, which can be critical both when times require caution regarding costs and when new opportunities arise.

Figure 2: Index performance vs. TLI, 2006-2010

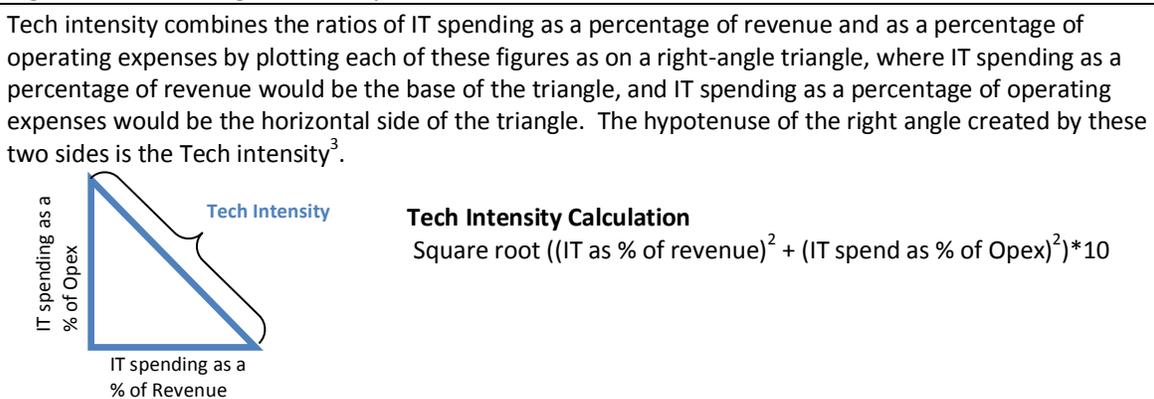


Continued Research in Technology Economics

The Technology Leadership Index's findings provide significant evidence of a relationship between technology investment and business results, but the true dynamics of this relationship are unclear. To fully understand and communicate IT's role in creating change within businesses, the field of Technology Economics must continue to develop.

One approach to further identify the relationship between technology business results is to simply compare tech intensity with profitability. Tech intensity is the level of technology spending as it relates to business results, as a percentage of revenues, and as a percentage of operating expenses. By using Tech intensity, which combines the ratios of IT spending against operating expense and revenue, organizations can get a more accurate measure of spending levels than the traditional approach of IT spending as a percentage of revenue alone, particularly during periods of economic uncertainty and volatility.

Figure 3: Calculating IT Intensity



The Tech Intensity Curve⁴ can be created by plotting an organization's IT intensity value (horizontal axis) against its profitability (vertical axis). Increased IT intensity often correlates to improved profitability up to a point where returns will begin to decline – the Tech Intensity Curve.

The Tech Intensity Curve can help organizations determine how their spending and performance aligns with the industry, as well as with their own historical investments and financial results, allowing them to measure how planned investments align with the optimal performance demonstrated on the curve.

Organizations can use information about the gaps between their results and the optimal state to focus IT planning to justify increased IT spending to improve business performance. This information could also be used to scale back or maintain IT investments to support revised performance results or plans.

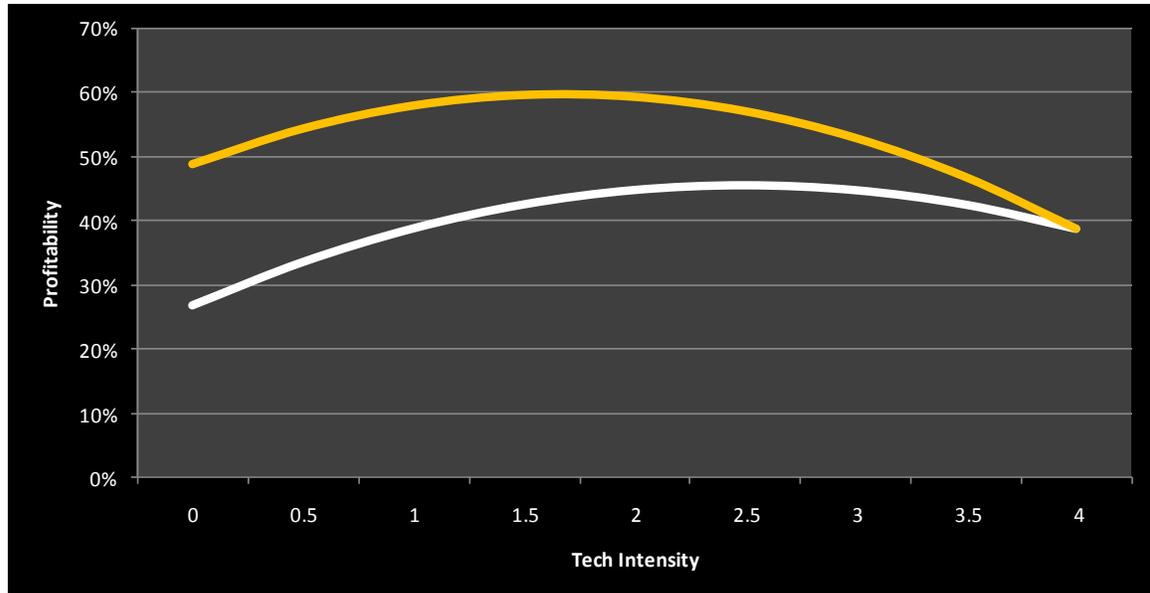
While the causality of these relationships may not be clear, firms can use this information to understand how their investments align with their industry peers and their organizational history. By understanding how business profitability aligns with IT spending levels, organizations

³ The hypotenuse is multiplied by 10 for scaling purposes.

⁴ Patent Pending, Howard Rubin

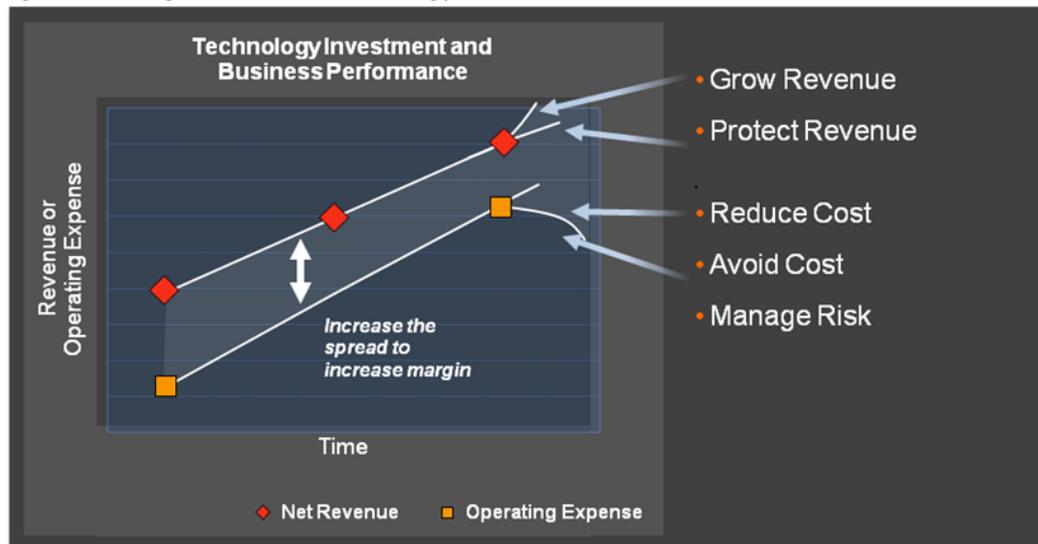
can more accurately anticipate, communicate, and justify their resource requirements in changing market conditions.

Figure 4: Banking & Finance Tech Intensity Curve



In order to effectively link technology activities to the business value they create, firms must begin at the business case. Simple categorizations of project value are not enough to communicate a project's potential. More granular categorizations of investments, based on the business value they create allow for deeper understanding of IT's role. While descriptions of basic initiatives such as growing revenue or reducing costs may be common, identifying initiatives that protect existing revenue streams, help avoid taking on new costs, or manage risk can establish a clearer picture of the IT portfolio as it relates to the business.

Figure 5: Categorization of Technology Assets



Capturing the costs in meaningful business categories is done typically for budget justification purposes, but less than 10% of organizations conduct post-implementation assessments of projects to ascertain whether or not the value was actually achieved – which is most unfortunate, because this is potentially the most accurate assessment of technology economics.

Conclusion

To date the field of technology economics has relied largely on datasets created with traditional technology performance and financial measures in mind. However, to clearly understand and communicate the value that technology creates for businesses, organizations, and nations alike, several elements must be improved:

- 1) Awareness of the potential of such information – measures such as the Technology Leadership Index and the Tech Intensity Curve clearly demonstrate that there is a relationship between technology and business results, but much more work is required to provide better insight into that relationship.
- 2) Tools and methodologies to analyze the information: while many organizations are awash with data, they often do not have the tools or methodologies to use the information to make informed decisions. Firms should identify what kinds of information they have to assist them in determining their own technology economics.
- 3) Measures and processes – Organizations should develop business cases with quantitative goals to establish the value of each project – their potential to reduce costs, grow revenues, manage risk, avoid costs, and protect revenue. All significant projects should be measured against these goals to determine their effectiveness.
- 4) Communication of performance – transparent communication of ongoing performance and results will likely provide clear evidence of the strong impact of technology, but most certainly will provide the ability to make effective business decisions.