# Vendor Landscape:
# Legacy Software Modernization

An increasingly vital and challenging effort of epic proportions.

INFO~TECH
research group

# Introduction

**Early efforts to modernize legacy systems had disappointing results. Today's vendors leverage technology that rivals the human brain!**

**This Research Is Designed For:**

✓ Enterprises running legacy applications that recognize the need to modernize due to numerous causes including:

- Cost – The legacy system is extremely expensive and difficult to maintain.

- Limitations – The legacy system meets the core needs of the business and clients, but lacks the capability to enhance and update.

- Staff – The resources responsible for maintaining the legacy system are dying off. It is a declining skill base where no new developers are being trained.

✓ Enterprises that recognize an increasing gap between IT and the business that is filled with inadequate functionality unable to fulfill current business needs.

**This Research Will Help You:**

✓ Understand what's changed in the field of modernization and how legacy systems can now be modernized relatively affordably, and in surprisingly short time frames.

✓ Evaluate legacy modernization vendors and products for your enterprise needs.

✓ Determine which vendors are most appropriate for particular use cases and scenarios.

# Executive Summary

- Executives around the world, in all sectors of our economy, are facing the realization that their legacy systems can no longer be ignored. As the developers responsible for maintaining these technological dinosaurs retire from the workforce, businesses need to start acting proactively to modernize their aging systems.

- Early attempts to modernize legacy systems were fraught with disastrous outcomes due to the lack of technological capability to assist with the process of transformation. This created a situation where many executives would rather accept the ever spiralling cost of continuing to run their legacy systems rather than risk career ending failure.

- Standards have been formed from the Object Management Group (OMG) along with tools conforming to the standards, methods, and technologies that greatly increase the success rate of today's transformations.

- Automated techniques and tools using an architecture-driven approach have been created and are seeing huge successes causing many legacy owners to take notice and engage one of the included vendors to transform their applications, data, and platforms.

- Of the vendors evaluated, Blue Phoenix was the vendor all other vendors agreed was the competition; as well, they offered the most complete service associated with legacy modernization, including testing and training of the client development resource pool on the newly transformed system.

- Platform, Application, and Database modernization was evaluated as well as the capabilities to offer additional functionality during the transformation process, optimization of the code, beyond that achieved through updated code languages, and extensive planning, design of the project, and execution.

# Market Overview

## How it got here

- Prior to the turn of the century (2000) most modernization efforts were manual in their attempt to convert old systems to new.

- Manual efforts proved to be problematic, error prone, and extremely time consuming and in many cases enormous failures costing businesses millions of dollars in the attempt and in potential lost revenue.

- Many business leaders chose to continue spending on the ancient systems electing to spend rather than risk a career-ending failure attempt.

- Systems continue to work and represent business-critical functionality; *if it ain't broke don't fix it*, created the exasperated situation many businesses have today.

## Where it's going

- Resources capable of maintaining legacy systems, specifically those in COBOL, Pascal, Fortran, RPG, etc. are retiring from the work force with no newly trained developers entering the field. For systems to continue, business are forced to act now before it's too late.

- Artificial Intelligence techniques are being employed to build automated translation tools in order to partially, or in some cases fully, translate old legacy code, and databases to newer technologies.

- Businesses need to stay current with technological trends to stay competitive and that means mobile solutions, Web solutions, and client server solutions.

- Vendors continue to push the envelope to gain more efficiency with their translation tools in producing highly optimized code, better than that of custom generated code.
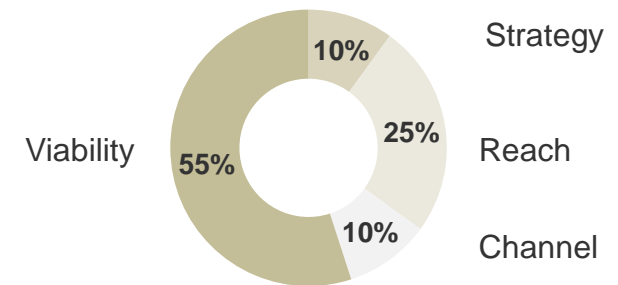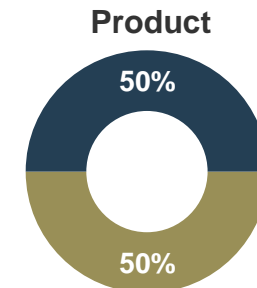
**Info-Tech Insight**

As the COBOL and RPG Boomers age, so too do the systems they ran and maintained. But since no new developer wants to learn COBOL or RPG, businesses are faced with modernizing their systems, or paying huge skyrocketing salaries to developers just to keep someone available to maintain the system.
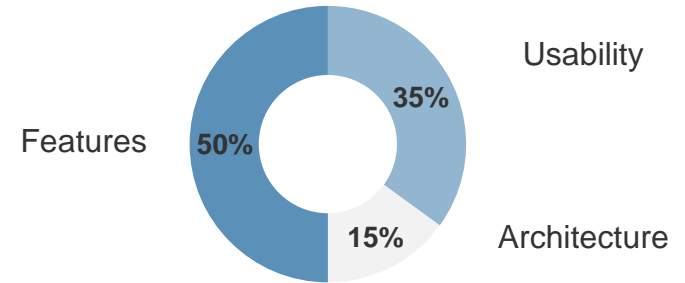
# Legacy Software Modernization Services Evaluation Criteria & Weighting Factors

## Product Evaluation

| Features | The solution provides basic and advanced feature/functionality. |
|---|---|
| Affordability | The five year TCO of the solution is economical. |
| Usability | The solution's dashboard and reporting tools are intuitive and easy to use. |
| Architecture | The delivery method of the solution aligns with what is expected within the space. |

## Vendor Evaluation

| Viability | Vendor is profitable, knowledgeable, and will be around for the long-term. |
|---|---|
| Strategy | Vendor is committed to the space and has a future product and portfolio roadmap. |
| Reach | Vendor offers global coverage and is able to sell and provide post-sales support. |
| Channel | Vendor channel strategy is appropriate and the channels themselves are strong. |

Usability 35%
Features 50%
Architecture 15%

**Product**

50%
50%

**Vendor**

Strategy 10%
Reach 25%
Viability 55%
Channel 10%

# The Info-Tech Legacy Software Modernization Services Vendor Landscape

**Champions** receive high scores for most evaluation criteria and offer excellent value. They have a strong market presence and are usually the trend setters for the industry.

**Market Pillars** are established players with very strong vendor credentials, but with more average product scores.

**Innovators** have demonstrated innovative product strengths that act as their competitive advantage in appealing to niche segments of the market.

**Emerging players** are newer vendors who are starting to gain a foothold in the marketplace. They balance product and vendor attributes, though score lower relative to market Champions.

For a complete description of Info-Tech's Vendor Landscape methodology, see the Appendix.

# Every vendor has its strengths & weaknesses; pick the one that works best for you

| | Product | | | | | Vendor | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Overall | Features | Usability | Price | Platform | Overall | Viability | Strategy | Reach | Channel |
| **ATERAS** | ◔ | ◕ | ● | ○ | ● | ◔ | ● | ◕ | ◔ | ◐ |
| **BluePhoenix** | ● | ● | ● | ○ | ● | ● | ● | ◐ | ● | ◐ |
| **FreeSoft** | ◔ | ◐ | ● | ○ | ◔ | ◔ | ◕ | ◕ | ● | ◐ |
| **Make** | ○ | ◐ | ◔ | ○ | ◔ | ◔ | ◐ | ◕ | ◔ | ◐ |
| **Semantic Designs** | ● | ◐ | ● | ○ | ◔ | ◔ | ● | ◐ | ● | ◐ |
| **Transoft** | ● | ● | ● | ○ | ● | ● | ● | ◐ | ● | ◐ |
| **TSRI** | ○ | ◐ | ● | ○ | ◔ | ◔ | ◐ | ◔ | ● | ◐ |

For an explanation of how Info-Tech Harvey Balls are calculated, please see the appendix.

**Info-Tech Insight**

Major influencers on overall result are Features *and* Usability/Service from the Products criteria, and Viability *and* Reach from the Vendor Criteria.

# The Info-Tech Legacy Software Modernization Services Value Index
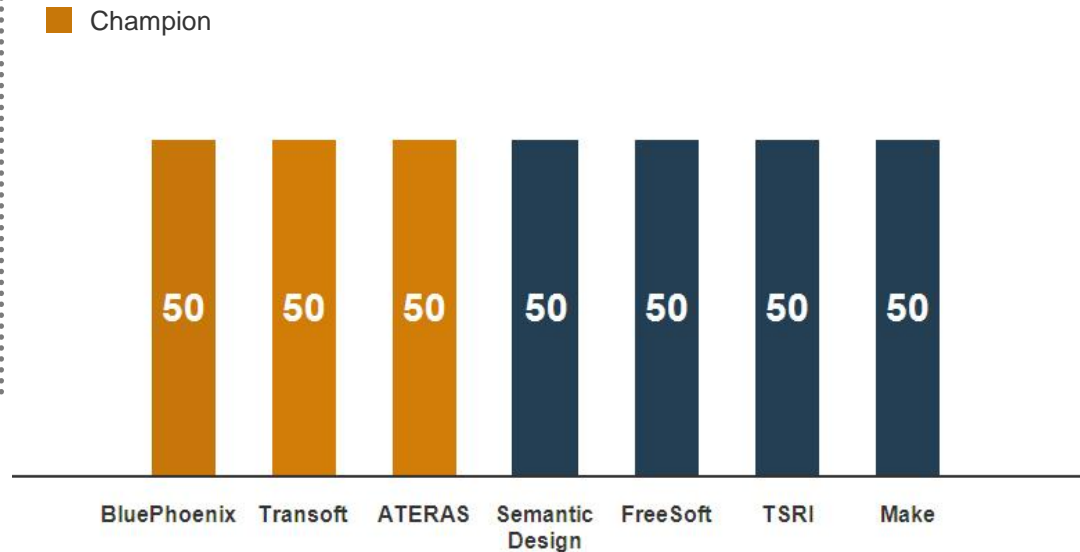
## What is a Value Score?

The Value Score indexes each vendor's product offering and business strength **relative to their price point.** It **does not** indicate vendor ranking.

Vendors that score high offer more *bang for the buck* (e.g. features, usability, stability, etc.) than the average vendor, while the inverse is true for those that score lower.

Price-conscious enterprises may wish to give the Value Score more consideration than those who are more focused on specific vendor/product attributes.

> **Due to the unique nature of these services, sample pricing could not be provided by any vendor, so a Value Index could not be calculated.**

■ Champion

| BluePhoenix | Transoft | ATERAS | Semantic Design | FreeSoft | TSRI | Make |
|---|---|---|---|---|---|---|
| 50 | 50 | 50 | 50 | 50 | 50 | 50 |

Sources:
1. To calculate the Value Score for each vendor, the affordability raw score was backed out, the product scoring reweighted, and the affordability score multiplied by the product of the Vendor and Product scores.

# Table Stakes represent the minimum standard; without these, a product doesn't even get reviewed

## The Table Stakes

| Feature | Description |
|---|---|
| Basic Application Modernization | Conversion of legacy applications to one of a .NET *or* Java codebase. |
| Basic Database Modernization | Conversion of legacy databases to, at minimum, a Microsoft SQL database. |
| Passive Legacy Code Optimization | Reduction of number of lines of code through automatic processes. |
| Use of Automated Tools | Use of a kit of automated tools to parse, modernize, and optimize legacy code. |
| Project Planning and Execution Services | Comprehensive project planning and management services accompanied by detailed documentation. |

## What Does This Mean?

The products assessed in this Vendor Landscape™ meet, at the very least, the requirements outlined as Table Stakes.

Many of the vendors go above and beyond the outlined Table Stakes, some even do so in multiple categories. This section aims to highlight the product capabilities **in excess** of the criteria listed here.

**Info-Tech Insight**

If Table Stakes are all you need from your Legacy Application Modernization, the only true differentiator for the organization is price. Otherwise, dig deeper to find the best price to value for your needs. With legacy modernization being so unique, pricing is generally fixed, with a fixed timeline, based 100% on your situation. (*As a general rule calculate about 20-50 cents per line of code to be transformed*)

# *Advanced Features* are the market differentiators that make or break a product

## Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of their individual scores across the listed advanced features. Vendors were given 1 point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points (see Partial functionality criteria).

*\*\*Partial functionality was given across several categories if vendors were capable. For example, some vendors offered additional outsourced development options to address any new features or functionality that was warranted during the modernization timeline.*

## Advanced Features

| Feature | What We Looked For |
|---------|-------------------|
| Enhanced Application Modernization | Conversion of legacy applications to either a .NET or Java codebase. |
| Enhanced Database Modernization | Conversion of legacy databases to Oracle or MS SQL or other commonly used database. |
| Platform Modernization | Specification of appropriate platform for the modernized application /database. |
| Additive Functionality Development | Ability to develop and include code for additive functionality within existing app. |
| Net New Application Development | Ability to develop net new software, components or features. |
| Active Legacy Code Optimization | Additional reduction of lines of code through granular manual review and editing. |
| Code Testing | Thorough testing of all modernized code in a parallel environment. |
| Training, Education, & Support | Services to ensure legacy staff are able to operate modernized applications. |

# Each vendor offers a different feature set; concentrate on organizational need

| | App Mod. | DB Mod. | PF Mod. | Plus New | Net New | Optimizing | Testing | Training |
|---|---|---|---|---|---|---|---|---|
| **ATERAS** | 🟢 | 🟢 | 🟠 | 🟢 | 🟢 | 🔴 | 🟠 | 🟢 |
| **BluePhoenix** | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟠 | 🟢 |
| **FreeSoft** | 🟢 | 🟢 | 🔴 | 🔴 | 🔴 | 🔴 | 🟢 | 🟢 |
| **Make Technologies** | 🟢 | 🟢 | 🔴 | 🟠 | 🟠 | 🔴 | 🟠 | 🟠 |
| **Semantic Designs** | 🟢 | 🟢 | 🟠 | 🟠 | 🟠 | 🔴 | 🟠 | 🟠 |
| **Transoft** | 🟢 | 🟢 | 🟢 | 🟢 | 🟠 | 🟢 | 🟢 | 🟢 |
| **TSRI** | 🟢 | 🟢 | 🟠 | 🔴 | 🟠 | 🟢 | 🟠 | 🟢 |

**Info-Tech Insight**

All vendors dealt with application and database modernization and some form of platform modernization whether by recommendation or assistance. The real differentiators come in when you want something a little extra during the modernization effort… some vendors allow for this, some will consider it, and some just won't even think about it.

# BluePhoenix has performed hundreds of modernizations over their 20+years, providing much needed experience for you

## ❯ *Champion*

Employees: 750+
Headquarters: Herzlia, Israel
Website: bhpx.com
Founded: 1987
Presence: Public – Worldwide
Offices: 16 countries
NASDAQ: BPHX
FY10 Revenue: $57.1M

**BLUEPHOENIX**
The Legacy Modernization Company

Due to project variability, standardized pricing cannot be determined.

### Overview

- BluePhoenix provides to their customers a comprehensive offering of automated tools, services, and expertise from mainframe optimization to application migration and re-hosting. Post–modernization services are also available.

### Strengths

- Mid to large scale modernization efforts.
- Project planning and scoping. Assisting clients with determining the right solution for the situation. Whether re-hosting, migration, redevelopment, or simply wrapped in a reusable SOA wrapper.
- Extensive experience minimizes client risk .

### Challenges

- Demand for modernization tools and services is highly dependant on IT capital spending budgets of clients. Economic conditions have a direct affect on revenue generated (revenue has decreased from 91.7M in 2008 to 77.8M in 2009 to 57.1M in 2010, and is expected to decrease again for 2011).

### Info-Tech Recommends:

BluePhoenix provides a fixed price, fixed schedule assessment of the conversion project, and provides a guarantee that the conversion will function and perform as expected.

# Transsoft capitalizes on its long history and extensive experience to help customers minimize risk and disruption

## Champion

Employees: 30+
Headquarters: Marietta, GA
Website: transoft.com
Founded: 1986
Presence: Privately held – part of IRIS
Offices: USA, UK

**TRANSOFT**
PART OF IRIS

Due to project variability, standardized pricing cannot be determined.

### Overview
- Transoft is part of the IRIS Software Group which is one of the UK's top software houses.
- Transoft assists clients to meet current challenges by modernizing critical legacy applications and systems.

### Strengths
- Utilizes latest modernization trends, techniques, and tools to extend, transform, and migrate critical business apps.
- Offers strong consult services to assist with integration services, modernization, migration, and training.
- Don't just move… improve approach (improvements to systems made during modernization effort).

### Challenges
- Modernization, migration, and transformation can be an IT capital expenditure, and as such may affect the viability.
- Comparatively low annual revenue to that of other competitors and champions of the market.

**Info-Tech Recommends:**

Transoft has a proven track record of assisting clients with tools and integration techniques that allow them to capitalize on new technologies without a huge investment in development resources.

# ATERAS differentiates itself with proven successes, ability to limit code freeze, and automated rules-based conversions

## > *Champion*

| | |
|---|---|
| Employees: | 50 |
| Headquarters: | Dallas, TX |
| Website: | ateras.com |
| Founded: | 1983 |
| Presence: | Privately held |
| | Sectors include: Insurance, Financial Services, Healthcare, Government, Universities |
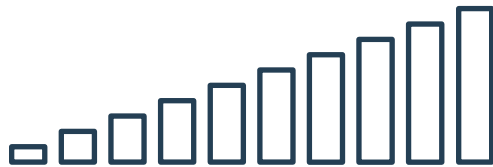
Due to project variability, standardized pricing cannot be determined. ATERAS can provide a ROM based on project size, and a fixed bid and timeline after assessment.

## Overview

- Since 2000 ATERAS has been performing automated analysis and conversions.
- Solutions include legacy assessment, code understanding, architectural, data and code transformation.

## Strengths

- Received *Best Migration Award* in 2006 and *Microsoft Product Innovation* award for their legacy migration conversion in 2009.
- Extensive experience having carried out manual migrations for 10 years prior to automating their process.
- Have assessed over 450 million lines of code, and over 120 language types, and converted over 65Million lines of code.

## Challenges

- Keeping abreast of latest trends in technology and making sure that conversion and migration teams and tools are capable of providing leading edge solutions for their clients. (i.e. modernizing to RIA Web solutions)

### Info-Tech Recommends:

With their suite of tools including eavRPM and DBShuttle, ATERAS can achieve 100% conversion automation, functional equivalency, and improved performance of your systems.

# Semantic Designs provides COTS tools that can be used from smartphone testing to legacy system code crawling

## Market Pillar

Employees: 10+
Headquarters: Austin, TX
Website: semdesigns.com
Founded: 1995
Presence: Privately held

Due to project variability, standardized pricing cannot be determined.

### Overview

- Provides analysis, enhancement and transformation services for large and complex systems.
- Provides tools, and services across numerous languages, databases, and platforms.

### Strengths

- COTS tool sets available to assist clients with increased quality and productivity through test coverage, metrics, and source code evaluation.
- DMS *Factory* toolkit to break down any language-to-language translation to rule-based equations.
- Extremely low-to-no-error rate on conversions.

### Challenges

- Small team - often works with System Integrator to provide full service to customer.
- Automated approach starts on a slower curve, and then ramps quickly to reduce overall time. Getting through the initial slow time can sometimes create perception issues.

**Info-Tech Recommends:**

Semantic Designs has proven techniques to transform languages, even without the context of data. Their DMS *factory* allows them to rapidly build custom tools for virtually any situation.

# FreeSoft transforms a variety of legacy systems & databases into Java EE environments & SOA based architecture

## Emerging Player

Employees: 280
Headquarters: Budapest, Hungary
Website: freesoftus.com
freesoft/hu.en/
Founded: 1998
Presence: Public (listed on BSE) –
Worldwide
Offices in: USA, Australia,
Hungary, UK
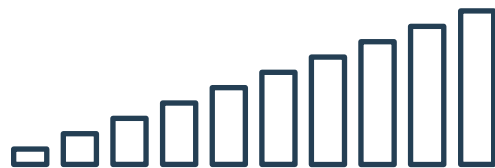
FreeSoft

Due to project variability, standardized pricing cannot be determined.

### Overview

- FreeSoft has been modernizing software globally for over 10 years.
- Has built and utilizes tools for conversion, project methodologies, and processes to transform legacy systems.

### Strengths

- Converts non-relational databases to relational, including Adabas, IMS, VSAM/ISAM to DB2, Oracle, Sybase, SQL, and even Access.
- Converts COBOL, RPG, Natural, Informix, 4GL, PL1 to Java EE environments (and SOA based architecture solutions).
- Provides comprehensive inventories of client systems.

### Challenges

- Limited to converting to JavaEE (excludes .NET environments).
- Maintaining a connection with leading edge technology trends for the modernized software target (destination).

### Info-Tech Recommends:

FreeSoft offers automated solutions to modernize and transform many legacy systems but lacks in the available target destinations, limiting their solutions to JavaEE/SOA solutions.

# TSRI may be newer to the game, but their knowledge about how to get you where you need to be is second to none

## Emerging Player

Employees: 17
Headquarters: Kirkland, WA
Website: softwarerevolution.com
Founded: 1995
Presence: Privately held

Due to project variability, standardized pricing cannot be determined. Offering and price schedule can be made available upon request.

### Overview

- TSRI is a relative newcomer to the modernization space compared to the champion vendors. However founder and CEO Philip Newcomb, is a driving force behind architecture-driven modernization and automation in place today.

### Strengths

- JANUS Studio toolset provides automated application and transformation blueprints, automated code transformation and refactoring.
- Enables legacy code translation to Web and cloud environments.
- Greater than 90% automated approach to modernization.

### Challenges

- Being relatively newer, they lack the volume of experience that many of the champion vendors have accumulated.
- Small team may be problematic on larger and numerous simultaneous projects.

**Info-Tech Recommends:**

TSRI focus on application and database modernization. If your systems need modernizing, the folks here at TSRI are among the best capable to take virtually any situation wherever you need to go.

# Make Technologies is the newest vendor in the game; however, their ability to reduce the amount of code is impressive

## Emerging Player

Employees: 80
Headquarters: Vancouver, BC
Website: maketechnologies.com
Founded: 2003
Presence: Privately held
Offices in: USA, Canada

Due to project variability, standardized pricing cannot be determined.

### Overview

- Make Technologies provides an end-end solution for application modernization.
- Global in their approach; however, most clients are North American based at this time (i.e. USA, Canada).

### Strengths

- Enterprise Suite – built on their TLM platform, delivers end-end automation for app modernization.
- 60% code reduction and as much as 85% cost savings by utilizing their suite of tools over custom code generation.
- Legacy expertise in COBOL, RPG, PL1, MUMPS, AS400, VSAM, CICS, Oracle, Natural, Powerbuilder, VB, and Java

### Challenges

- The newest of all the vendors, experience is limited in comparison to the other vendors.
- Gearing and preparing for future growth if market booms as expected (as legacy developers retire).
- Conversion only to Java.

### Info-Tech Recommends:

Make Technologies is a sound choice. Their automated end-end solution using their Enterprise Suite and TLM platform appears solid; however, their target destination is limited to Java.

# More features generally means more cost, but if its what you need then look to the exemplary performers

**Features include Platform, Application, and Database modernization as well as code optimization, testing, training, and even adding some additions**

*1* **Features**

*2* Usability/Service

*3* Viability

*Exemplary Performers*

**BLUEPHOENIX**
The Legacy Modernization Company

**TRANSOFT**
PART OF IRIS

*Viable Performers*

**SED**

**ATERAS**

*Adequate Performers*

**make**®

**TSRI**
the software revolution inc.

**FreeSoft**

# How well your project runs has direct correlation to how successful it will ultimately be, choose wisely to reduce risk

**Usability and service includes the project execution, how well the vendor plans and documents your system, and whether they include your team.**

*Exemplary Performers*

*1* <span style="color:red">Features</span>

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*Viable Performers*

*2* **Usability/Service**

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*3* <span style="color:red">Viability</span>

*Adequate Performers*

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# When your project is a capital expense you need to be able to trust that your vendor will be around tomorrow to finish

**Longevity of the vendors has an important weighting, not only does it mean they have more experience, but it also means they have staying power**

| | |
|---|---|
| *1* Features | |
| *2* Usability/Service | |
| *3* **Viability** | |

*Exemplary Performers*

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the software revolution inc.

# Appendix

- A discussion of Info-Tech's various vendor ranking methodologies.

# Vendor Evaluation Methodology

Info-Tech Research Group' Vendor Landscape market evaluations are a part of a larger program of vendor evaluations which includes Solution Sets that provide both Vendor Landscapes and broader Selection Advice.

From the domain experience of our analysts as well as through consultation with our clients, a vendor/product shortlist is established. Product briefings are requested from each of these vendors, asking for information on the company, products, technology, customers, partners, sales models and pricing.

Our analysts then score each vendor and product across a variety of categories, on a scale of 0-10 points. The raw scores for each vendor are then normalized to the other vendors' scores to provide a sufficient degree of separation for a meaningful comparison. These scores are then weighted according to weighting factors that our analysts believe represent the weight that an average client should apply to each criteria. The weighted scores are then averaged for each of two high level categories: vendor score and product score. A plot of these two resulting scores is generated to place vendors in one of four categories: Champion, Innovator, Market Pillar, and Emerging Player.

For a more granular category by category comparison, analysts convert the individual scores (absolute, non-normalized) for each vendor/product in each evaluated category to a scale of zero to four whereby exceptional performance receives a score of four and poor performance receives a score of zero. These scores are represented with "Harvey Balls", ranging from an open circle for a score of zero to a filled in circle for a score of four. Harvey Ball scores are indicative of absolute performance by category but are not an exact correlation to overall performance.

Individual scorecards are then sent to the vendors for factual review, and to ensure no information is under embargo. We will make corrections where factual errors exist (e.g. pricing, features, technical specifications). We will consider suggestions concerning benefits, functional quality, value, etc; however, these suggestions must be validated by feedback from our customers. We do not accept changes that are not corroborated by actual client experience or wording changes that are purely part of a vendor' market messaging or positioning. Any resulting changes to final scores are then made as needed, before publishing the results to Info-Tech clients.

Vendor Landscapes are refreshed every 12 to 24 months, depending upon the dynamics of each individual market.

# Value Index Ranking Methodology

Info-Tech Research Group' Value Index is part of a larger program of vendor evaluations which includes Solution Sets that provide both Vendor  Landscapes and broader Selection Advice.

The Value Index is an indexed ranking of value per dollar as determined by the raw scores given to each vendor by analysts. To perform the calculation, Affordability is removed from the Product score and the entire Product category is reweighted to represent the same proportions. The Product and Vendor scores are then summed, and multiplied by the Affordability raw score to come up with Value Score. Vendors are then indexed to the highest performing vendor by dividing their score into that of the highest scorer, resulting in an indexed ranking with a top score of 100 assigned to the leading vendor.

The Value Index calculation is then repeated on the raw score of each category against Affordability, creating a series of indexes for Features, Usability, Viability, Strategy and Support, with each being indexed against the highest score in that category. The results for each vendor are displayed in tandem with the average score in each category to provide an idea of over and under performance.

The Value Index, where applicable, is refreshed every 12 to 24 months, depending upon the dynamics of each individual market.