UPGRADE ERP WITH CONFIDENCE

KEEP BUDGET AND SCHEDULE ON TRACK WITH DATA AS A SERVICE

WHITE PAPER

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ERP SYSTEMS REQUIRE CONTINUOUS INVESTMENT

Projects to implement and maintain business-critical applications too often fall off track. As one Fortune 500 CIO described his firm's application development program: "Every application project takes too long and costs too much." Such pains are especially acute for projects involving enterprise resource planning (ERP) systems. An ERP system often represents the most expensive IT asset that a firm will maintain, requiring continuous attention and investment.

A given ERP system will undergo a series a upgrades over its life cycle, with each upgrade consuming millions of dollars and months, or even years, of implementation time. In theory, upgrading a packaged ERP application should be straightforward: the vendor knows everything about the code and data model, and can provide a standard set of upgrade tools and best practices. In reality, ERP upgrades are almost universally slow and costly, delaying business value while consuming IT project time and budgets.

The primary reason for this is testing. Since modern businesses are so dependent on ERP, a failure in a single module has the potential to cripple ongoing operations. Ensuring total system quality through rigorous testing, then, is the primary but elusive objective for any ERP upgrade. As the Gartner Group describes, quality does not come cheaply:

> Quality assurance takes resources and time, which translate into costs. Devoting time and resources to quality assurance tasks during an ERP upgrade is necessary to obtain quality outcomes. This must be reflected in the project budget, staffing and timeline, but business leaders may be reluctant to commit the level of resources needed when there is little perceived business improvement to be gained by the upgrade. This limited business involvement is one key reason for automating quality assurance tasks as much as possible, especially for functional testing. The challenge is to focus quality assurance efforts where they are absolutely needed in order to achieve the best possible upgrade project outcome without overburdening project resources (staff, budget and project schedule).[1]

UPGRADES TAKE TOO LONG

CHALLENGING TESTING REQUIREMENTS STALL ERP PROJECTS

Extensive changes to packaged code – layered on top of customizations already introduced to the ERP system – mean that testing for an upgrade project rarely unfolds in a standardized, predictable manner. Rather, the complexity entailed by upgrades dictates a highly manual and iterative testing process.

- **Custom Code:** ERP implementations almost always include customizations, all of which need to be rolled forward and tested thoroughly. The developers who created the custom code may no longer be available, making testing even more critical as new developers learn the details of the code they are migrating.

[1] Gartner Group, "ERP Upgrades: Quality Assurance Is About More Than Application Testing"

- **Packaged Code Changes:** The "vanilla" application provided by the vendor may have changed significantly from the previous version. As an example, a recent release of Oracle EBS contained over 200 data object model changes. A major version upgrade might require new middleware, and the functionality of the upgraded application may be drastically different.
- **New Tuning Requirements:** As the code and underlying infrastructure of the ERP system changes, previous performance tuning may no longer apply. Associated databases may need significant re-testing to ensure adequate response levels.
- **Data Access Changes:** As the data model of the ERP system changes, applications may require new data objects fed from different systems. In M&A scenarios, data from the acquired company must be fed into the upgraded system. Data access from new sources drives considerable testing, for both transaction and reporting accuracy.
- **Dev/Test Environment Provisioning:** Not only are many different types of tests required to ensure project success, but the tests themselves are often long and considerably delayed. Oftentimes, unexpected technical challenges drive the need for unplanned development and testing cycles. As a result, teams must approve, provision, and support additional ERP environments, a process that can take weeks or months at many organizations.
- **Challenging Hardware Requirements:** Upgraded ERP systems typically require more than double the storage and hardware of the original system. In addition, during the upgrade project an extra staging landscape is created for testing, while a third landscape may be needed for the upgraded target system. The resulting costs – often for interim usage – can run into the millions of dollars.
- **Database Patch Management:** An upgraded ERP system might require new patches for the underlying database. This requires additional testing of the database layer, with even more test cycles for the application to determine the root cause of errors during upgrade.

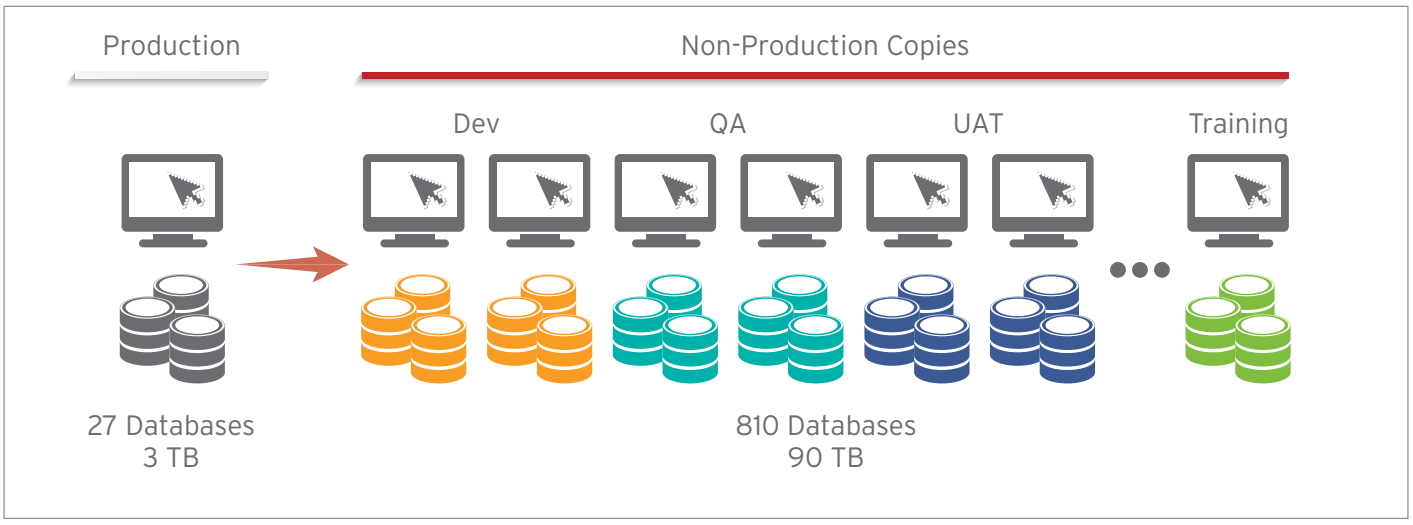

Figure 1: Upgrade projects require expensive non-production environments, especially for testing

UPGRADES COST TOO MUCH

PROJECT COMPLEXITIES MAKE BUDGET OVERRUNS THE NORM

In a recent survey of large enterprises, the Panorama Group found that 54% of ERP projects exceed budgets, with more than 40% of those overrunning planned expenditure by at least 25%.[2] As delays and complications arise, they drive costs up and result in ERP projects that run over budget and schedule. Key factors contributing to this dynamic include:

- **Contractor Costs:** Expensive contractors and consultants, paid on a time and materials basis, sit idle while hardware is procured, databases are patched, and testing environments are provisioned.
- **Configuration Explosion:** Unexpected system configurations drive the need for additional QA environments, increasing operational and capital expenses.
- **Functionality Shortfalls:** Upgrades are sometimes only partially implemented due to schedule and cost overruns, delaying or even eliminating features and process improvements that could cut operational costs for the business.
- **Application Downtime:** Bugs that slip into production systems after upgrade can result in costly downtime and protracted, expensive rework efforts.

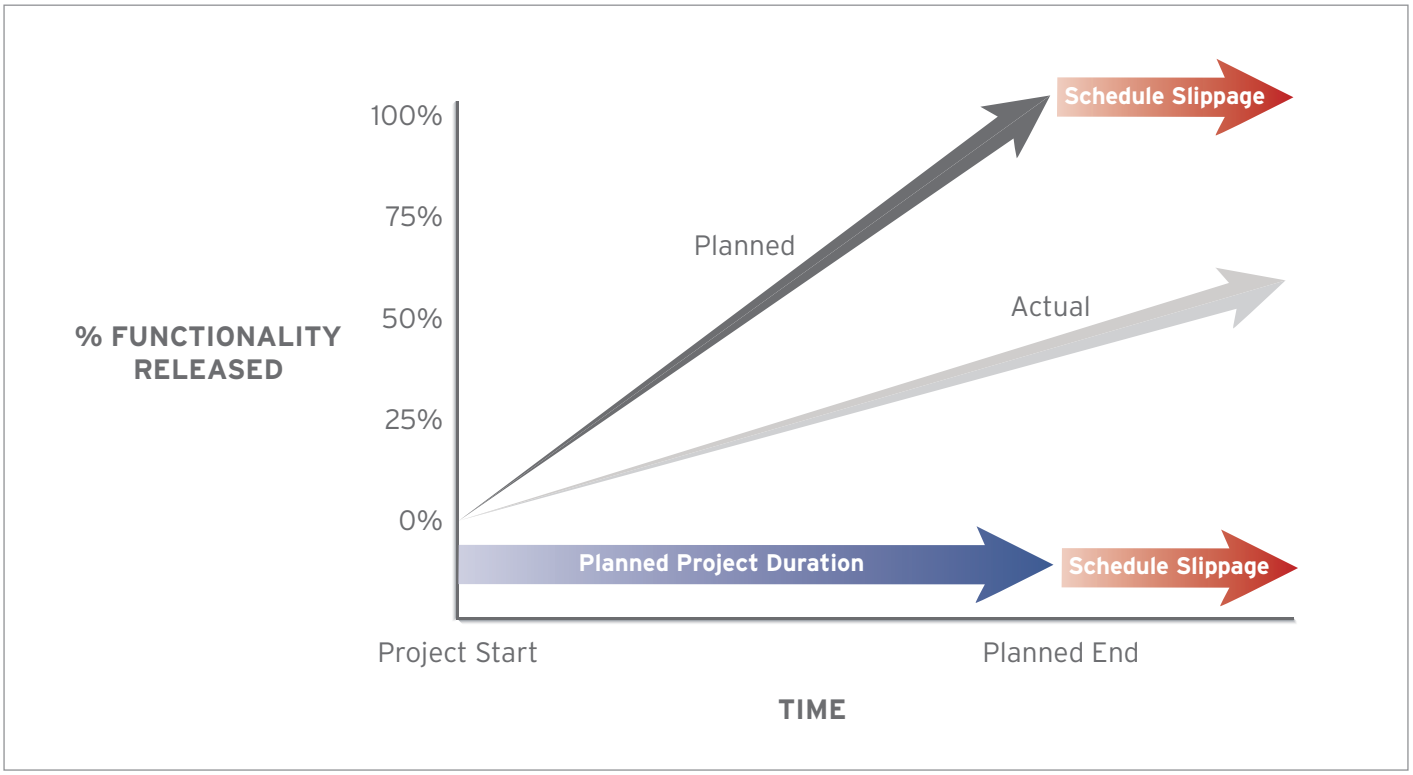

Figure 2: Planned vs. actual upgrade project trajectories

[2] Panorama Consulting Solutions, "2014 ERP Report: A Panorama Consulting Solutions Research Report"

DATA AS A SERVICE REDUCES UPGRADE COST, COMPLEXITY

Technologies in the emerging category of Data as a Service (DaaS) promise to mitigate risk and deliver against key requirements for ERP projects. More specifically, DaaS platforms bring the benefits of virtualization to ERP data by:

- Capturing ERP application data—including ongoing changes—in production systems
- Versioning and managing data across the full application lifecycle
- Delivering virtual copies of data to non-production systems, including test environments for upgrade projects

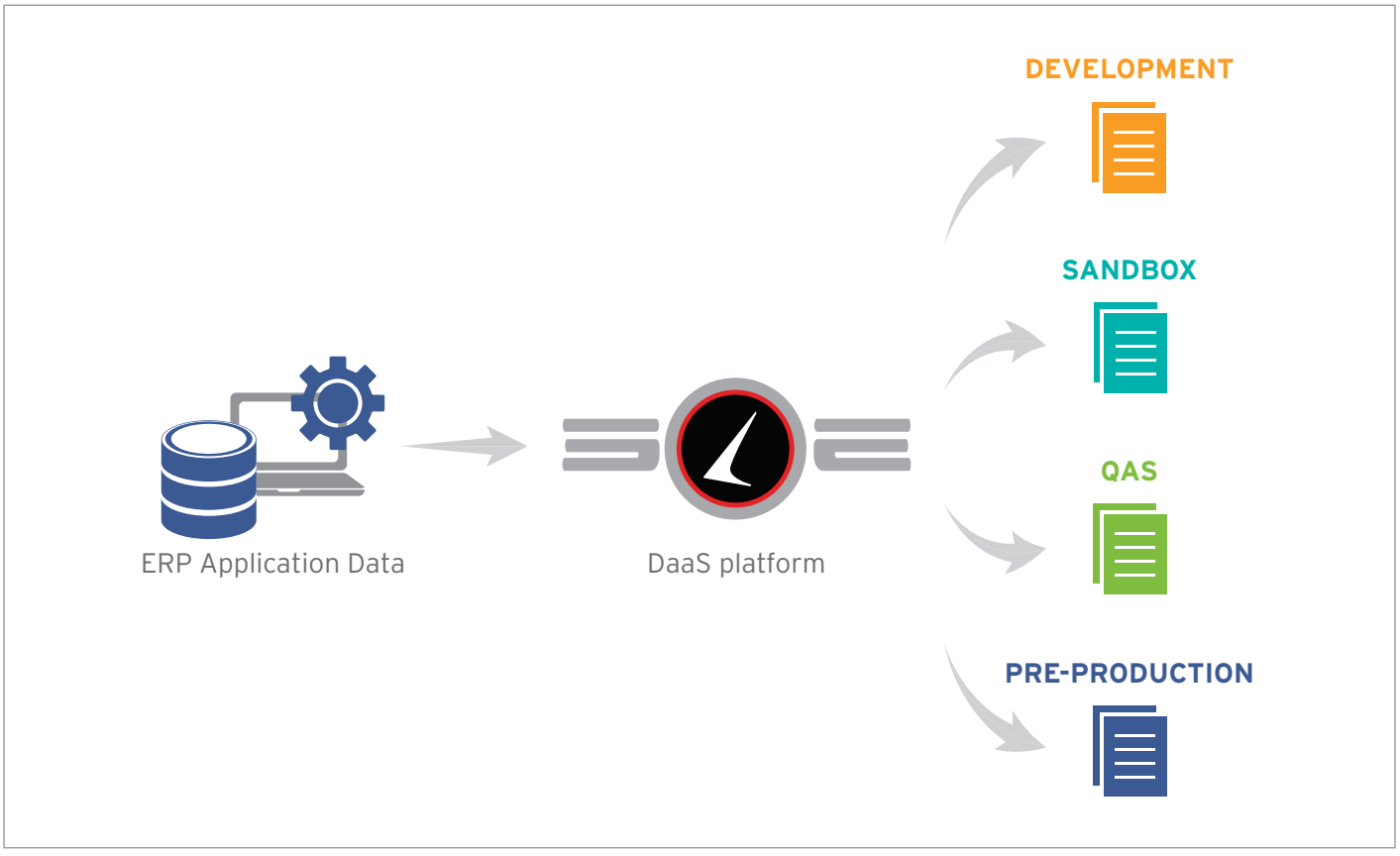

Figure 3: DaaS platforms efficiently provision data to ERP upgrade teams

By replacing expensive and redundant hardware with intelligent and flexible software, DaaS eliminates significant infrastructure costs for ERP application upgrades. More importantly, by delivering ERP data to project teams faster, DaaS dramatically accelerates the pace of development and testing. In practice, DaaS delivers three top-level benefits to organizations that use ERP and are planning an upgrade:

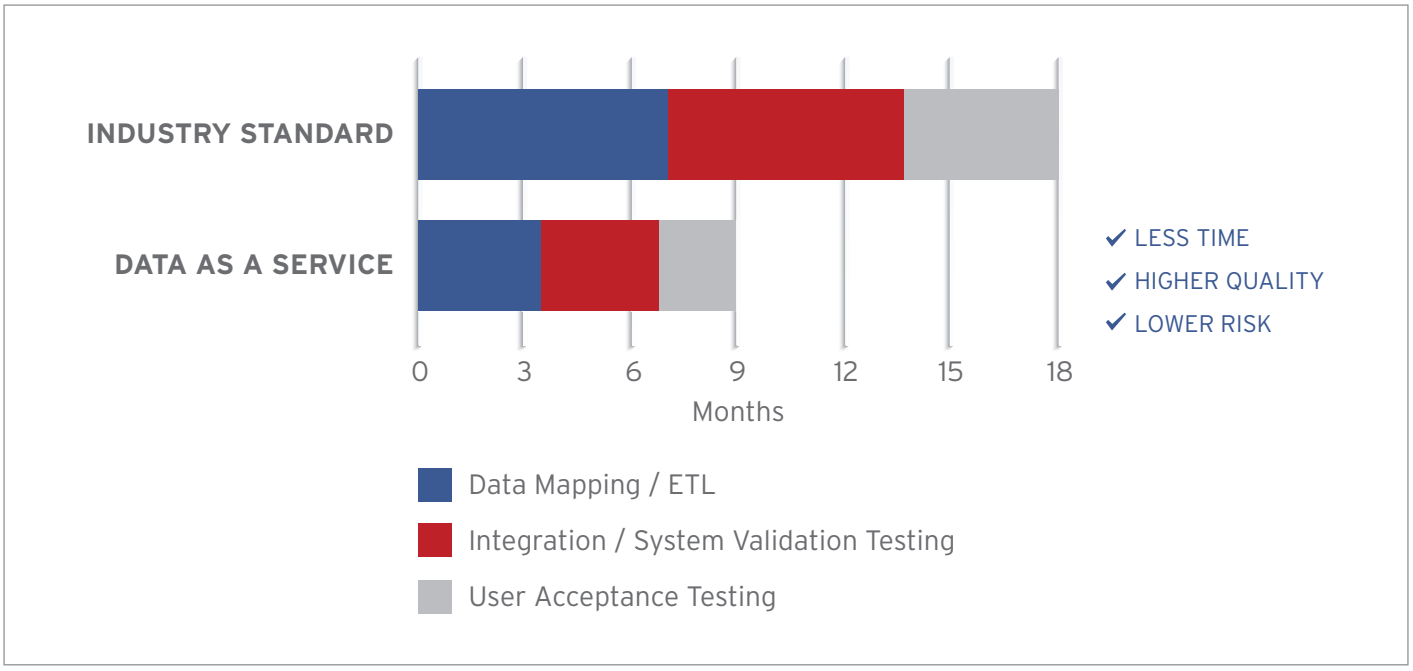

Figure 4: Shrink upgrade schedules with better fast, flexible data

- **Productivity Gains:** DaaS solutions deliver full test environments in minutes, so project teams can work instead of wait.
- **Cost Savings:** DaaS decreases the expense of intermediate storage for upgrade projects. Instead of duplicating the physical storage environment of a production ERP system, DaaS solutions share common data blocks across non-production environments.
- **Risk Reduction:** Better testing ensures user acceptance of the upgraded system, with higher quality and functionality. If errors do occur after cutover, DaaS provides an easy means for recovering old data whenever needed.

FASTER UPGRADES, FEWER BUGS

ACCELERATE KEY DEVELOPMENT AND TESTING ACTIVITIES THROUGH DAAS

DaaS provides functionality that speeds application projects, including ERP upgrades:

- **Self-Service Creation of Dev/Test Environments:** With minimal storage costs or process delays required to create virtual data copies, ERP teams can create as many test environments as needed.
- **Avoid Recode with Early Error Detection:** With the ability to quickly deliver refreshed test environments, teams can do more testing earlier so they can identify bugs when they are less expensive to remedy.

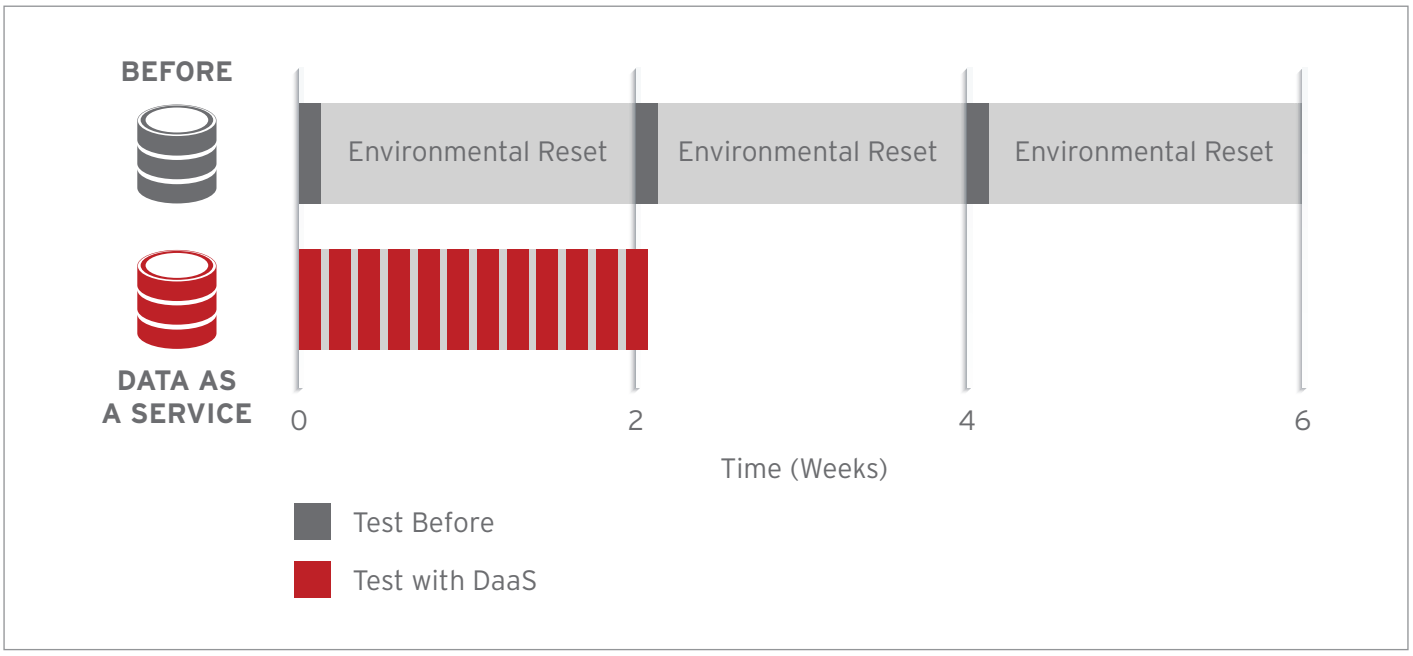

Figure 5: Faster data enables earlier, more frequent testing

- **Easier Database Patch Testing:** Using DaaS to deliver virtual copies of databases, test teams can easily apply patches and test effects before migrating patched databases to the target system.
- **Database Rollback/Rollforward:** Creating multiple virtual database copies at different points in time allows better testing and root-cause investigations.
- **Sharing and Collaboration:** Leveraging DaaS, a developer can easily pass a copy of a database to another developer for unit testing, integration testing, certification, or cutover.
- **Multi-Source Integrated Provisioning:** With DaaS, developers and testers can provision multiple environments from different sources as of the same point in time, allowing effective and repeatable tests of code integration across applications.

SUMMARY

While ERP upgrades are necessary to keep pace with business needs, they too often exceed budget and disrupt ongoing operations. Overrunning desired timelines and budgets reduces an upgrade's ROI and increases the payback period for the project. Data as a Service, however, has the potential to transform both the process and economics of critical upgrades. By accelerating data delivery and reducing infrastructure requirements, DaaS eliminates time, cost, and risk associated with ERP upgrades, increasing overall project ROI.

Upgrade ERP With Confidence:
Keep Budget and Schedule on Track with Data as a Service

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Delphix Corp.
275 Middlefield Road, Suite 210
Menlo Park, CA 94025
www.delphix.com