Businesses today face a broad range of challenges driven by the macroeconomic environment, emerging business models, and continuing technology innovation. These changes include Web-based customer and supplier relationships; wider supply chains; mergers, acquisitions, and divestitures; and dynamic use of consultants, partners, and outsourcing. Businesses increasingly depend on IT infrastructure to support change and enable competitive advantage.

For these reasons, agility—the ability to change quickly and effectively—has become an essential capability for many companies. Agile businesses can quickly:

- understand market dynamics and anticipate customer needs
- design, introduce, or modify products, services, and processes
- implement a new value delivery system, even if that means reshaping the information infrastructure
- identify resources (people, goods, and information) internally or externally

Business agility requires an IT foundation that dynamically adapts to rapidly changing business conditions while meeting cost, quality of service, and risk management objectives. CIOs are facing pressures to:

- grow or shrink infrastructure in alignment with business needs
- integrate or split infrastructure in response to mergers, acquisitions, divestitures, and restructuring
- quickly implement new business models
- enable frequent business process and product changes
- rapidly distribute and collect information and provide infrastructure access for customers, partners, and employees
- demonstrate return on IT
- reduce operational and acquisition costs
- deliver greater service levels
- provide continuous and secure access to the company’s information resources

Because IT is an integral part of the value delivery system of virtually every organization today, adaptive infrastructure is a prerequisite for business agility. If an organization’s IT infrastructure is not adaptive, IT will be an inhibitor of change rather than an enabler.

Each enterprise has its own unique agility requirements that are dictated by business strategy and models, industry trends, competitive pressures, and regulatory change as well as technology environment. The key to making the right improvements to influence agility—and making them quickly—is to take an organized, step-by-step approach, beginning with assessment and prioritization.
HP has partnered with INSEAD, the international school of business management, to develop industry-leading business agility metrics. The HP assessment methodology evaluates agility across business and IT processes using these metrics:

- **time**—the speed at which infrastructure and business service changes can be implemented
- **range**—the breadth or scope of change that can be supported or introduced
- **ease**—the facility (measured by factors such as effort and cost) with which business changes can be supported or introduced

The agility baselines established during an HP assessment indicate priorities for immediate adaptive infrastructure improvements—and also provide concrete measures for evaluation over time.

**principle #1: simplification**

Simplification reduces complexity and risk, and it enables greater speed and ease when implementing change. Simple applications and systems are easier to adopt, use, connect, manage, and modify.

Complexity can increase risk and impede or even prevent change. Studies show that complexity increases costs and reduces return on investment.

Keeping architectures simple makes them easier to change and minimizes resource requirements. Simplification of the IT infrastructure can be achieved in a number of ways, including:

- **consolidation**, which streamlines and updates infrastructure: fewer elements lead to greater simplicity—this, in turn, yields greater speed and ease when making changes
- **outsourcing**, which simplifies the IT environment the business is responsible for managing
- **application integration**, which simplifies connections between applications for improved interoperability
- The HP utility data center (UDC), whose simple user interface allows administrators to easily reconfigure systems using available resources

Like the other adaptive infrastructure design principles, simplification can result in greater business agility (time, range, and ease) and clear business benefits (such as lower costs, reduced risk, and better quality of service).

One way to simplify is to standardize.
principle #2: standardization

Standardization helps expedite change and significantly reduces the cost and risk of change. When changes are standardized, they can be applied across different processes, procedures, technologies, or applications—for example, standardized product information can be distributed across multiple applications, systems, and directories.

Simplicity is an antidote to complexity, and standardization is a counterbalance to customization. While there are times when it is appropriate to make or buy customized applications, services and solutions, there are other times when standardization is the right approach—and will increase business agility by enabling components, operations, and procedures to be reused.

Standardization of IT infrastructure can be achieved in a number of ways, including:

- use of industry-standard interfaces, platforms, and software development techniques
- establishment of common processes and policies for managing change
- synchronization of expectations between IT staff and the businesses they support
- definition of common requirements for manageability, security, version control, configuration management, capacity and performance management, and release to production process—this approach enables outsourcing of the lower layers of the solution stack (hardware, software, and middleware)

HP has standardized nine core processes for managing change in IT service management. This approach defines key processes such as system configuration and migration that allow people, processes, and technologies to evolve using proven, well-defined methodologies.

Standardization promotes reuse of processes and data models, enabling them to be adapted to other purposes. For example, if an organization standardizes the way it codifies a part number or product code, that standard can be applied in all relevant applications to reduce inventory costs, enable quantity purchasing, and facilitate greater speed, ease, and range of data management.

Standardization paves the way for modularity.

principle #3: modularity

Modularity provides the ability to change one aspect of a system without affecting other components. Modularity can apply to virtually all IT capabilities and infrastructures.

In virtualization, a modular approach to resources increases flexibility. Using this approach, resources such as storage and computing power can be assigned to applications or business processes as needed, dynamically.

Both managed services and comprehensive outsourcing deliver modularity because certain functions, infrastructure layers, groups of people, or assets are segregated for management by outside resources. This makes each component easier to change.

The HP adaptive network architecture uses modularity to improve the responsiveness of the network to business needs. Systems can be grouped in predefined network compartments based on common access requirements; compartments can be constructed to connect or disconnect in near real time, and any compartment can be modified without changing the others.
To enable business agility, IT infrastructure components must be integrated through a uniform system of relationships that is easy to understand, manage, and modify. In this way, integration facilitates greater ease and range of change.

IT infrastructures are large, complex systems made up of many components. If the parts are not optimally connected, attempts to move or reconfigure them can create enormous difficulties that are not easy to resolve.

IT infrastructure can be integrated in a number of ways. For example, in application development, enterprise application integration simplifies connectivity by using pervasive and widely adopted standards.

Reusing modules that have been created and proven under conditions of actual use delivers greater business agility through increased speed and productivity, reduced risk, lower costs, and improved quality of service. Creation of reusable, enterprise-specific application architectures can provide specific application and infrastructure modularity while delivering global consistency across multiple data centers.

When systems are composed of modules, they must be well integrated to function effectively.

principle #4: integration

HP Integrated Support Services (ISS) provide a single point of contact and accountability for managing multiple support contracts across multiple vendors. Without ISS, CIOs and their staffs have to negotiate and administer multiple contracts and deal with the complexity of multiple interfaces, coordination problems, inconsistent service levels, and multiple delivery models. When support services are integrated, the enterprise and its partners and networks gain consistency, quality, accountability, cost savings, and time and ease benefits. This approach also helps enable agility because system interdependencies are taken into account.
To enable greater business agility within an enterprise, adaptive infrastructure design principles need to be applied with an incremental, balanced, focused approach.

An incremental approach enables greater flexibility and responsiveness to changing conditions. An incremental approach enables IT staff to return more quickly to a known state—and offers more alternative strategies and more possible futures.

Balance is also key to successful implementation. It is important to know how far to go in order to achieve benefits—and what is excessive. For example, if IT systems become too simplified, the organization may lose important functionality. If an organization standardizes when it should differentiate, it can lose competitive advantage and potential business benefits. If modularity is carried too far, it may create greater complexity. If modular components are poorly integrated, the system can become unmanageable.

When an organization focuses on business agility improvements, it is important to begin with consensus between IT staff and their business clients on what the agility needs and issues are—and on what solution areas have the greatest potential for positive impacts.

And finally, when an organization wants to improve agility in any area, it is essential to examine potential solutions in light of the adaptive infrastructure design principles. If a solution does not contain some combination of these principles—applied in an incremental, balanced, focused way—then the enterprise is not likely to achieve the agility improvements it is seeking.

When you’re ready to pursue agility improvements within your enterprise, contact HP. We have the people, processes, and technologies to help integrate your business processes, applications, and infrastructure for maximum long-term agility.

Our team of adaptive infrastructure experts can:

- assess how well your current IT environment responds to business change and recommend steps you can take to improve it
- design and integrate IT environments for adaptability
- incorporate the most advanced software and services for managing and controlling your IT environment
- leverage the power of a $4 billion annual R&D investment in future architectures and related technologies to build the most reliable, most advanced infrastructure available
- provide a portfolio of competitively priced products, services, and solutions that span from industry-leading application integration approaches and network architectures to high-end utility data center solutions

As a result of pursuing an adaptive infrastructure with HP, you’ll enjoy a greatly improved return on both your previous and future IT investments. You’ll experience lower acquisition costs and operating costs, a greater degree of adaptability, increased freedom to integrate business processes as well as technologies, and, finally, a level of operational excellence that drives revenue and provides a competitive advantage for years to come.
If you’d like to learn more about how to begin moving your enterprise toward an adaptive infrastructure, call your local HP representative or visit [www.hp.com/services](http://www.hp.com/services) or [www.hp.com/hps/agility](http://www.hp.com/hps/agility) today.