



Cloud Computing

-Облачные вычисления

Что такое Cloud Computing?

- Это «Облачные» вычисления
- Это опыт пользователей и бизнеса
 - Cloud Computing – стиль представления информационных технологий, где приложения, данные и другие IT ресурсы представлены как стандартное предложение посредством сети в гибкой ценовой модели
- Это методология управления инфраструктурой и сервисами
 - Cloud Computing – это путь **управления** большим числом **виртуальных ресурсов** таким образом, что они выглядят как один большой ресурс
 - И такая инфраструктура может быть использовано для доставки сервисов с максимально гибким масштабированием

Эффективное «Облако» базируется на динамической инфраструктуре

- Виртуализация + Стандартизация + Автоматизация
 - Снижение стоимости владения
 - Повышение степени гибкости



IT инфраструктура достигла критической точки

до 85% простоя

В распределенных вычислительных сетях, ресурсы бездействуют до 85% времени

70 центов на 1 доллар

в среднем 70% IT бюджета тратится на модернизацию существующей IT инфраструктуры, а не на добавление новых возможностей

1.5 раза

взрывной рост информации, ведущий к ежегодному увеличению количества систем хранения на 54%

40 миллиардов долларов

Потребительский рынок и промышленность теряют приблизительно \$40 миллиардов ежегодно, или 3.5 процента продаж, из-за неэффективности системы поставок.

33%

33 % потребителей, разорвут отношения с компанией, почувствовав брешь в безопасности

Потрясающие факты, говорящие, что неэффективность прогрессирует!

Мир усложняется, требования к ИТ растут



Smart traffic systems



Intelligent oil field technologies



Smart food systems



Smart healthcare



Smart energy grids



Smart retail



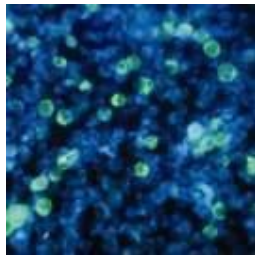
Smart water management



Smart supply chains



Smart countries



Smart weather



Smart regions

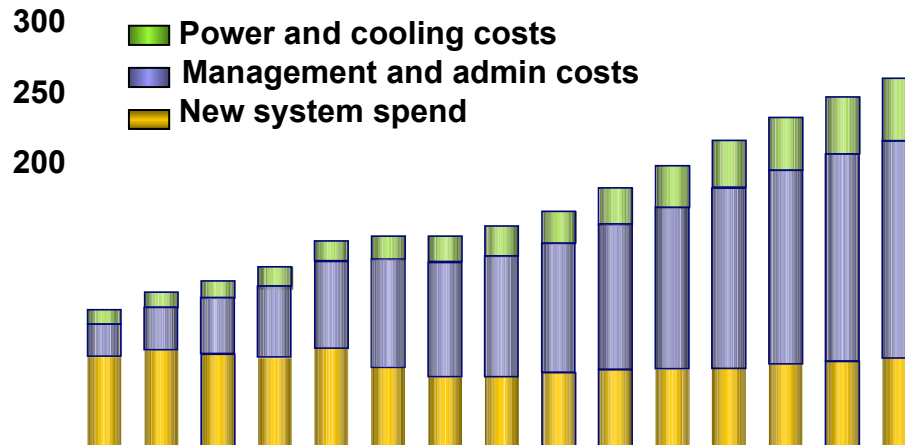


Smart cities

Необходимость в прогрессе IT очевидна

Global Annual Server Spending

(IDC)



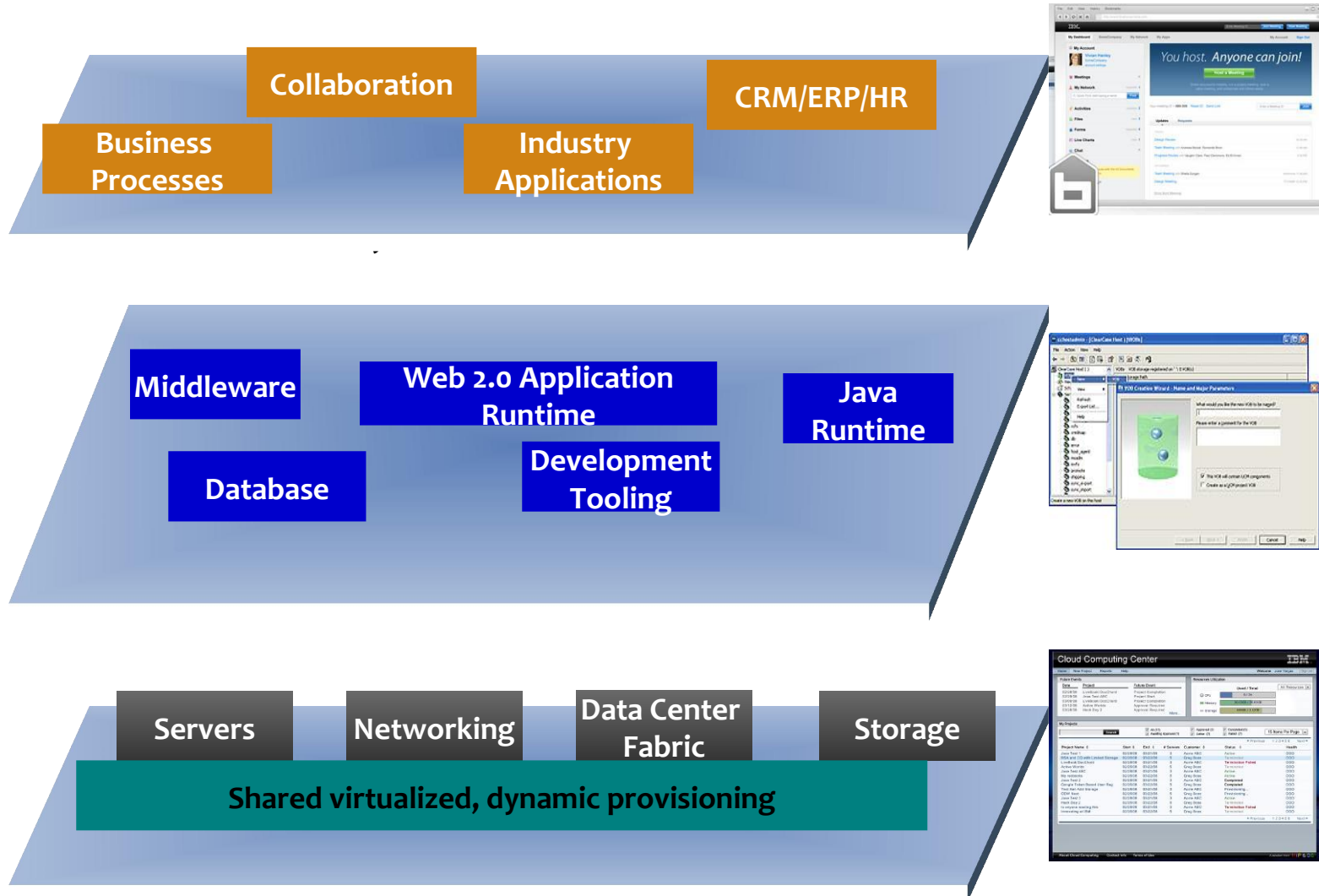
“Как и многие другие компании, мы всегда используем возможность привлечения внешних юридических лиц, для управления IT так, чтобы мы могли сосредоточиться на большем количестве стратегических инициатив.”
Kurt Rao, Time Warner Inc.

Uncontrolled management and energy costs

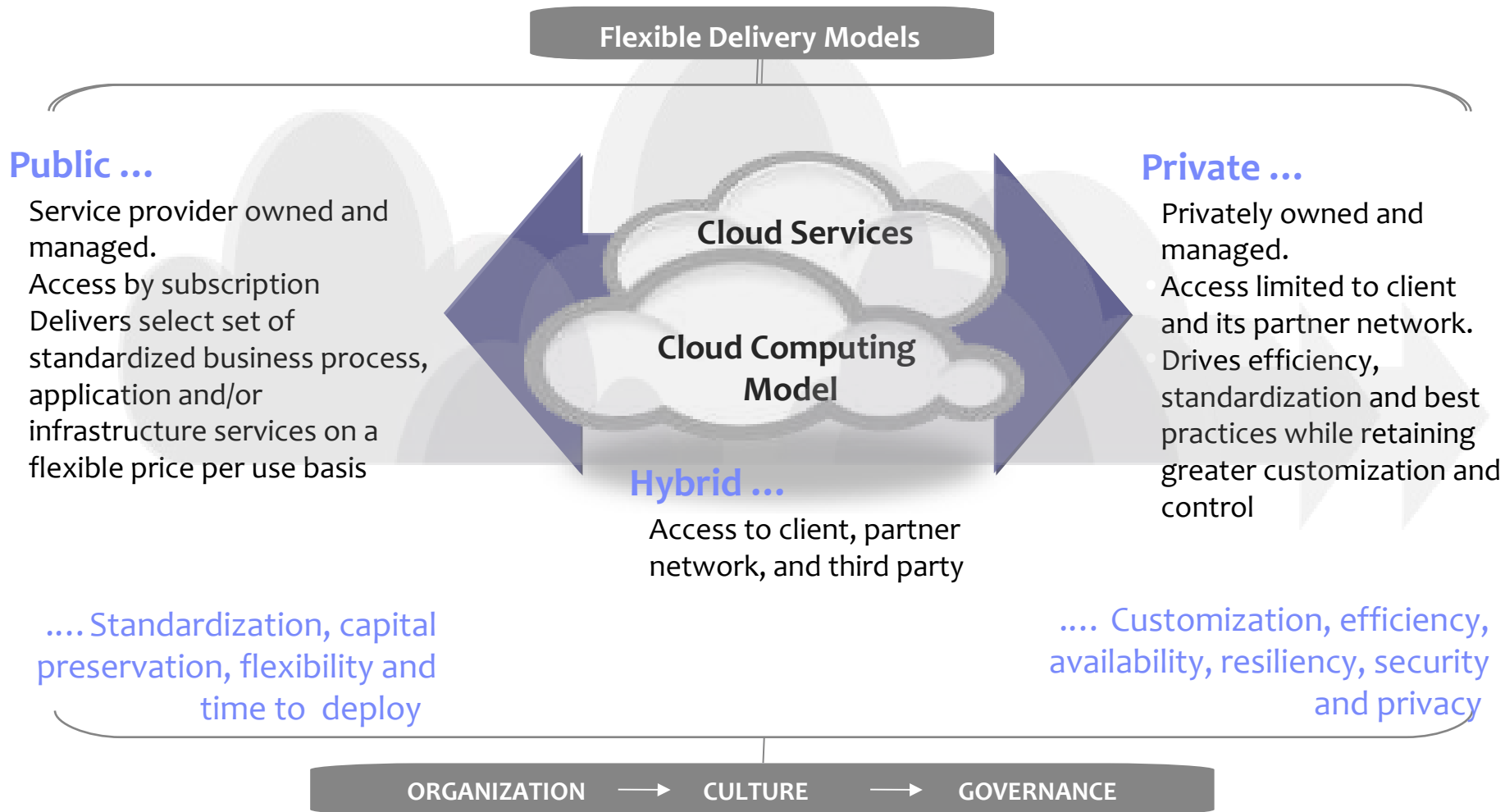
Steady CAPEX spend

Для достижения прогресса, компаниям необходимо обратить внимание на проблемы связанные с **операционными расходами** на содержание серверов, системам хранения и сетей предприятия, а **не только на капиталовложения**

«Облачные» вычисления – варианты использования



Модель развертывания «Облачных» вычислений



...service sourcing and service value

Где используются «Облачные» вычисления

- **SaaS / Web infrastructure applications**
- **Portal Applications**
- **Media Distribution**
- **Scalable Web Sites**
- **Business Continuity (Backup/Recovery)**
- **Collaboration Infrastructure**
- **High-Performance Computing**
- **High volume, low cost analytics**
- **Development and Testing**
- **Back Office Applications**

- ***В тех случаях, когда риски и стоимость миграции приложений могут быть слишком высоки:***
 - Transaction processing
 - ERP workloads
 - Highly regulated workloads

Бизнес с «Облачными» вычислениями

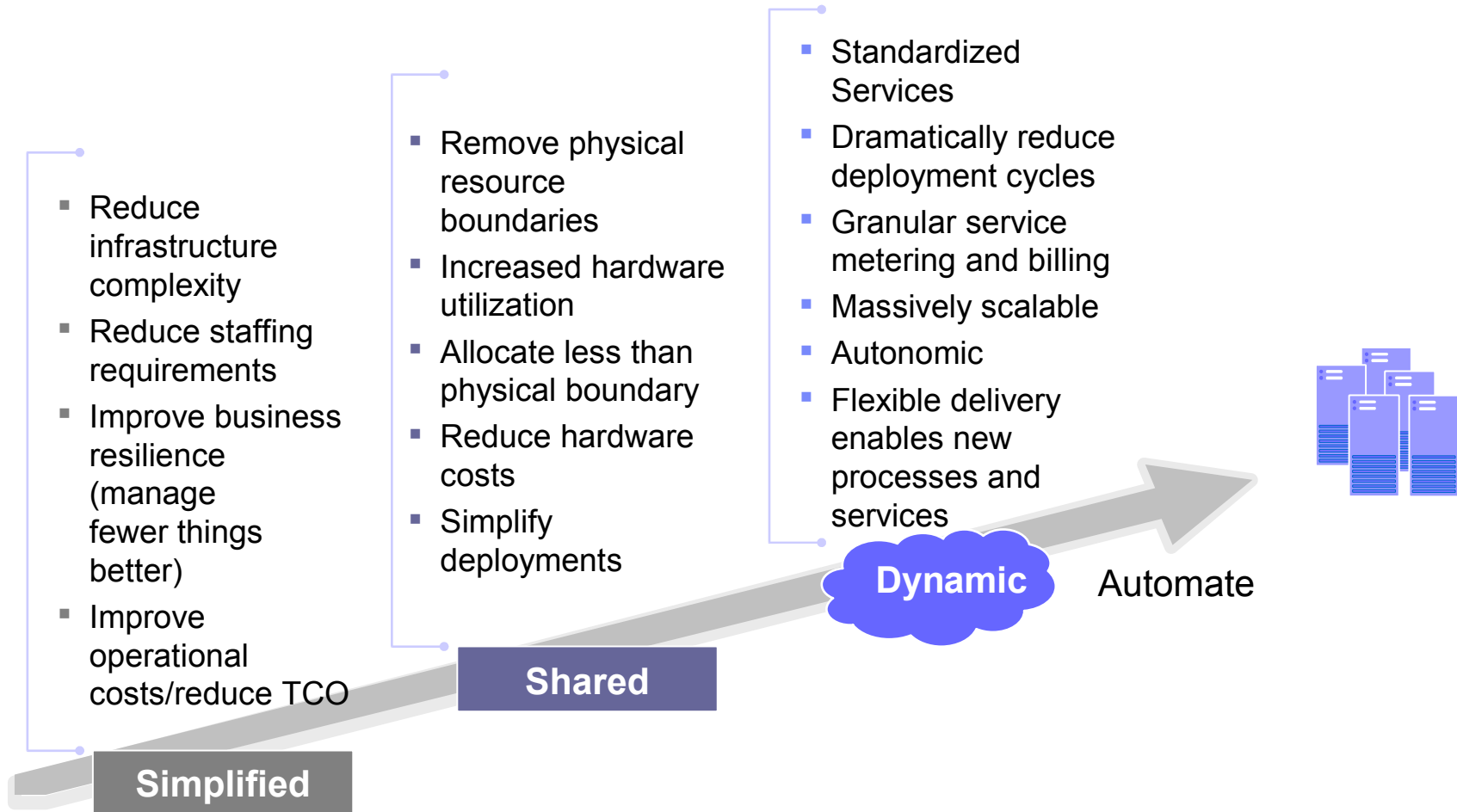
- Инициатива IBM SaaS Specialty помогает партнерам разрабатывать и продвигать технологию SaaS
 - SaaS Enablement Tools и Workshops для оказания помощи в разработке сервиса
 - Различные варианты исполнения– in-house, IBM hosted или IBM SaaS Hosting Partners
 - Гибкая политика цен для программного обеспечения IBM
 - Почасовая оплата программного обеспечения IBM на сайте Amazon
 - Набор маркетинговых преимуществ для SaaS бизнес партнеров

Прагматичный подход по переходу к «Облачным» вычислениям

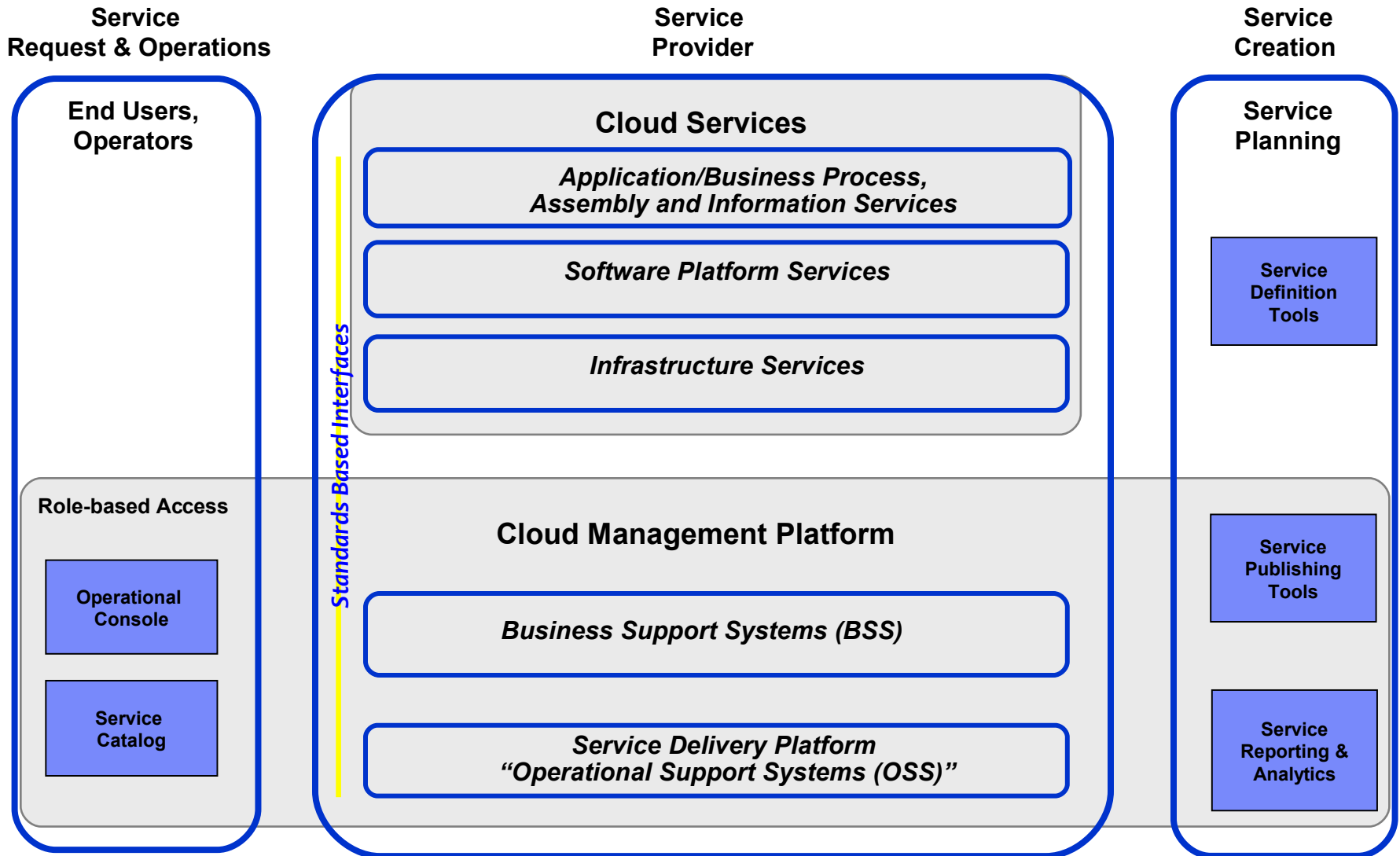
- Создание плана трансформации IT
- Определение моделей архитектуры для «Облачных» Вычислений
- Анализ загрузки IT инфраструктуры
- Выбор оптимального соотношения Моделей Доставки сервисов
- Реализация «Облачных» вычислений



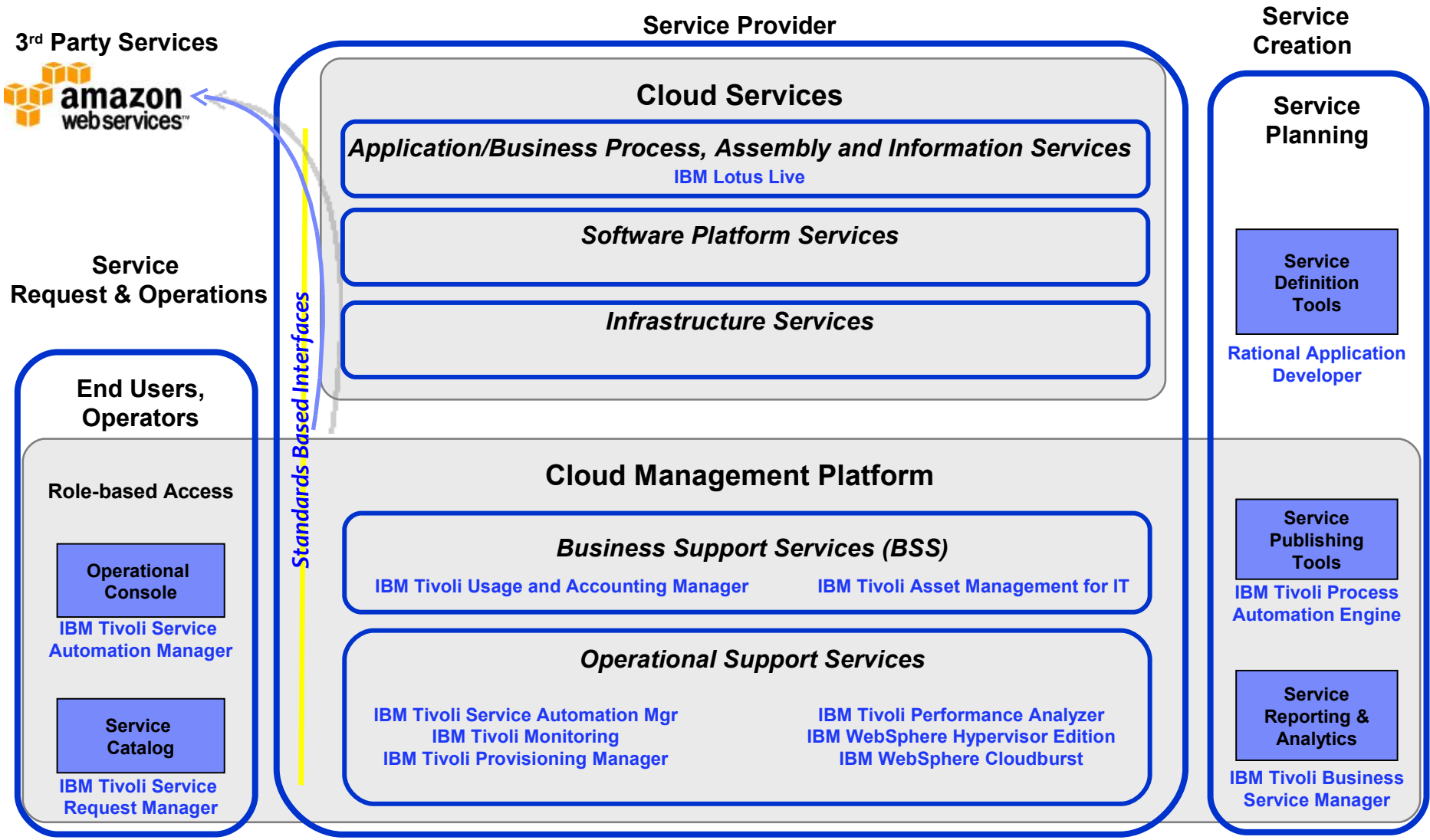
Шаг 1: Создание плана трансформации ИТ



Шаг 2: Определение моделей архитектуры для «Облачных» Вычислений



Продукты и сервисы IBM для Облачных Вычислений



IBM SWG Cloud Services

Продукт	Описание	Конкурентное бизнес преимущество
LotusLive Meetings	Reservation-less meeting solution hosted online with web, voice, and video conferencing and presentation capabilities	Enable companies to simply, securely, and quickly share information and collaborate across company boundaries
LotusLive Events	Online event management service to create, host, and manage online meetings and conferences, plus tools for registration, promotion, and post-event analysis	
LotusLive Connections	Integrated suite of web-based collaboration services that lets you create profiles, manage activities, share files, and instantly contact others in your business network	Multiple communication and collaboration tools in one, easy-to-use program without the high risks or costs typically involved
LotusLive Engage	Suite of Web 2.0 services that combines file sharing, project management, instant messaging, surveys, and data visualization along with a dedicated online meeting space	Increased productivity with quicker and easier preparation, execution, and follow-up of a meeting or project
LotusLive iNotes	Email and personal calendar web-based service hosted by IBM in a multi-tenant environment	Provides full-featured email capabilities without management overhead
LotusLive Notes	Online version of IBM's Lotus Notes email tool	

IBM SWG Cloud Enabling Offerings

Service Request & Operations

Продукт	Описание	Конкурентное бизнес преимущество
Tivoli Service and Automation Manager	Reduces IT operational costs by automating the processes used to deliver and manage a cloud computing environment, and provides an IT organization an entry point into service management for cloud computing	Unifies and automates key service support and asset management processes
Tivoli Service Request Manager	Manages requests and tasks management software with best practice processing with a "one-touch" IT experience that enables faster time to market	

Service Creation

Продукт	Описание	Конкурентное бизнес преимущество
Rational Application Developer	Helps Java™ developers rapidly design, develop, assemble, test, profile and deploy high quality Java/J2EE™, Portal, Web/Web 2.0, Web services and SOA applications.	Increases productivity and shortens the development and test cycles
Tivoli Process Automation Engine	A component of the Tivoli Change and Configuration Management Database. Combined with the Tivoli Release Process Manager automates complex deployments in the context of your overall release management process,	Assesses impact on the IT infrastructure and business critical functions before you release
Tivoli Business Service Manager	IBM Tivoli® Business Service Manager provides enterprise, public sector and service provider organizations with advanced service and process visibility in targeted, real-time dashboards.	Accelerate problem resolution with automated service impact and root-cause analysis

Business Support Services

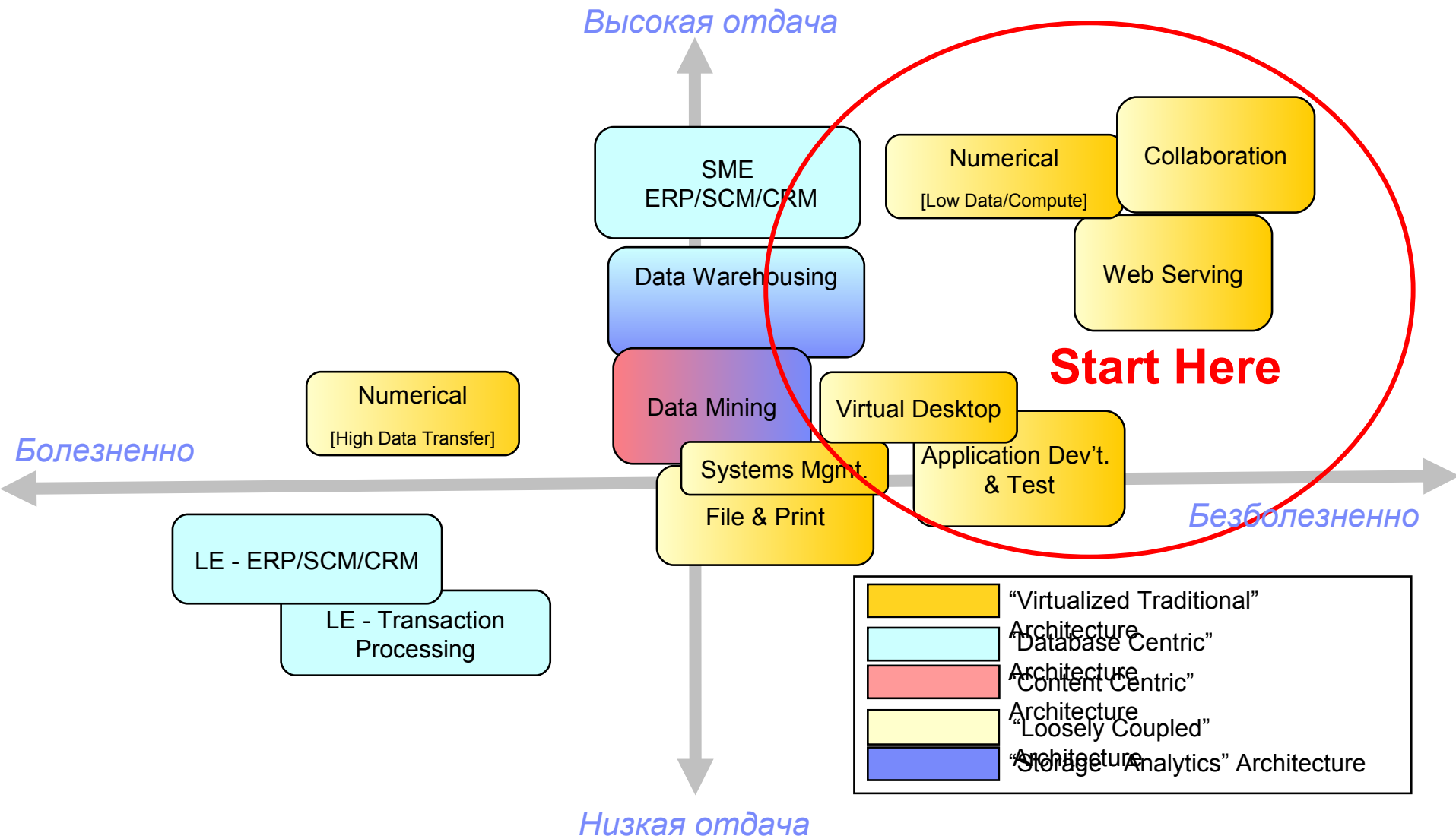
Продукт	Описание	Конкурентное бизнес преимущество
Tivoli Usage and Accounting Manager	Aggregates and reports on the use of applications, servers, storage, networks and other IT resources so organizations can accurately charge for related use	Understand costs and track, allocate and invoice by department, user and many additional criteria
Tivoli Asset Manager for IT	Enables effective management of the IT asset lifecycle, to lower cost, mitigate license compliance risk, and better align IT with business goals	Improve service desk quality & incident resolution time with accurate IT asset information

IBM SWG Cloud Enabling Offerings (continued)

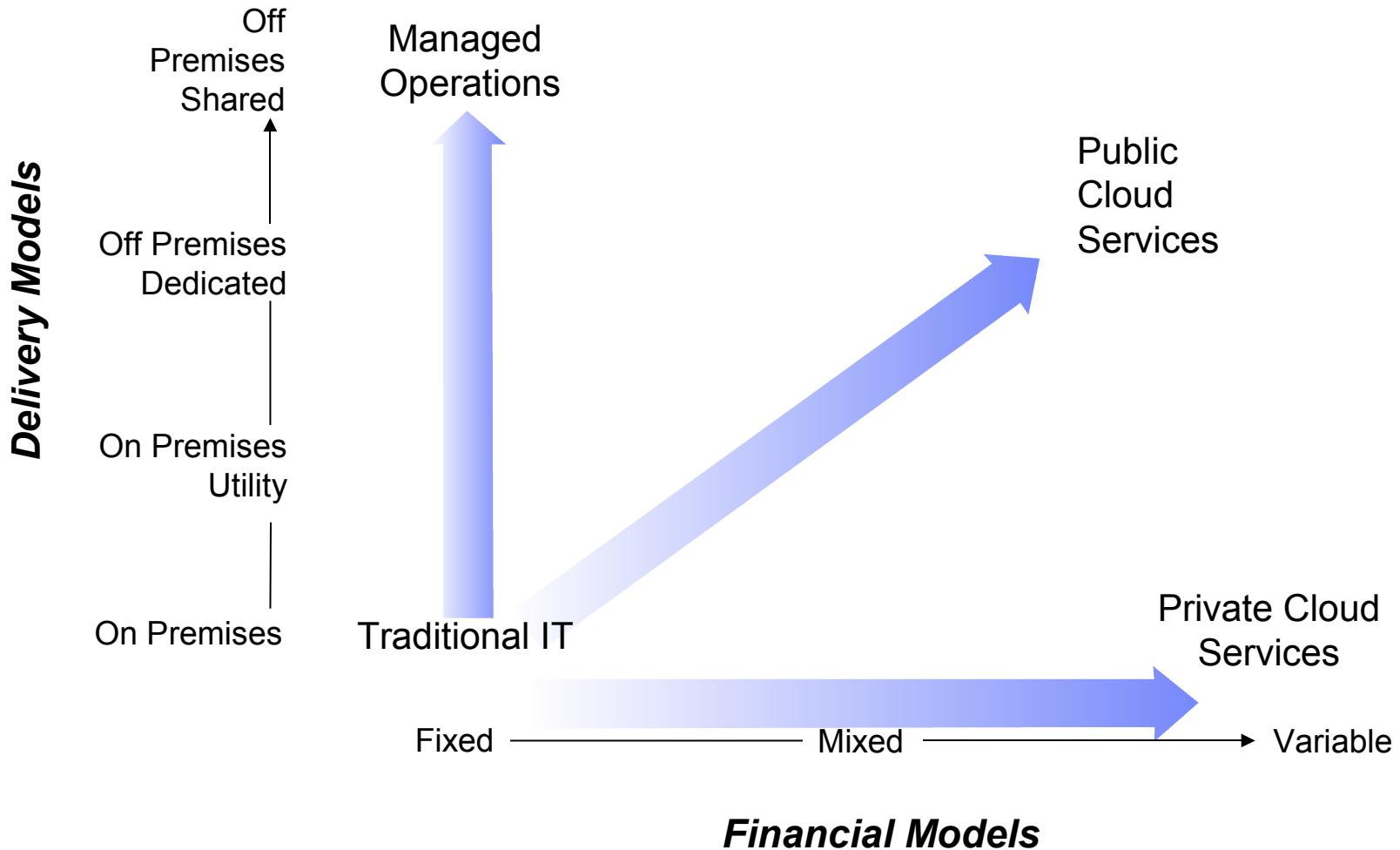
Operational Support Services

Продукт	Описание	Конкурентное бизнес преимущество
Tivoli Service and Automation Manager	Reduces IT operational costs by automating the processes used to deliver and manage a cloud computing environment, and provides an IT organization an entry point into service management for cloud computing	Unifies and automates key service support and asset management processes
Tivoli Monitoring	Prioritizes consolidation decisions by visualizing physical and virtual server utilizations against historical trends and automating clients' best practice in response to system events	Helps you identify and resolve server availability and performance issues
Tivoli Provisioning Manager	Automates the provisioning and configuring of servers, operating systems, middleware, software, storage and network devices for improved resource utilization	Unifies and automates key service support and asset management processes
Tivoli Performance Analyzer	Predictive trending on key operational metrics provides simple, intuitive forecasting to focus monitoring on emerging problems; seamlessly extends Tivoli Monitoring	Helps operations and IT staff understand resources, identify and resolve problems, and predict and avoid future problems
WebSphere Application Server Hypervisor Edition	Special edition of WebSphere Application Server that runs on top of a hypervisor, such as VMware ESX, and supports the Open Virtualization Format (OVF)	Drives business agility by providing an innovative, performance-based foundation to build, reuse, run, integrate and manage SOA applications and services optimized for server virtualization environment
Websphere CloudBurst Appliance	Hardware appliance providing access to WebSphere virtual images and patterns for easily, quickly and repeatedly creating application environments that can be securely deployed and managed in a private cloud	Fast application deployment in minutes versus weeks. Pre-defined application environments based on more than 10 years of management best practices. Vault-like security in an appliance

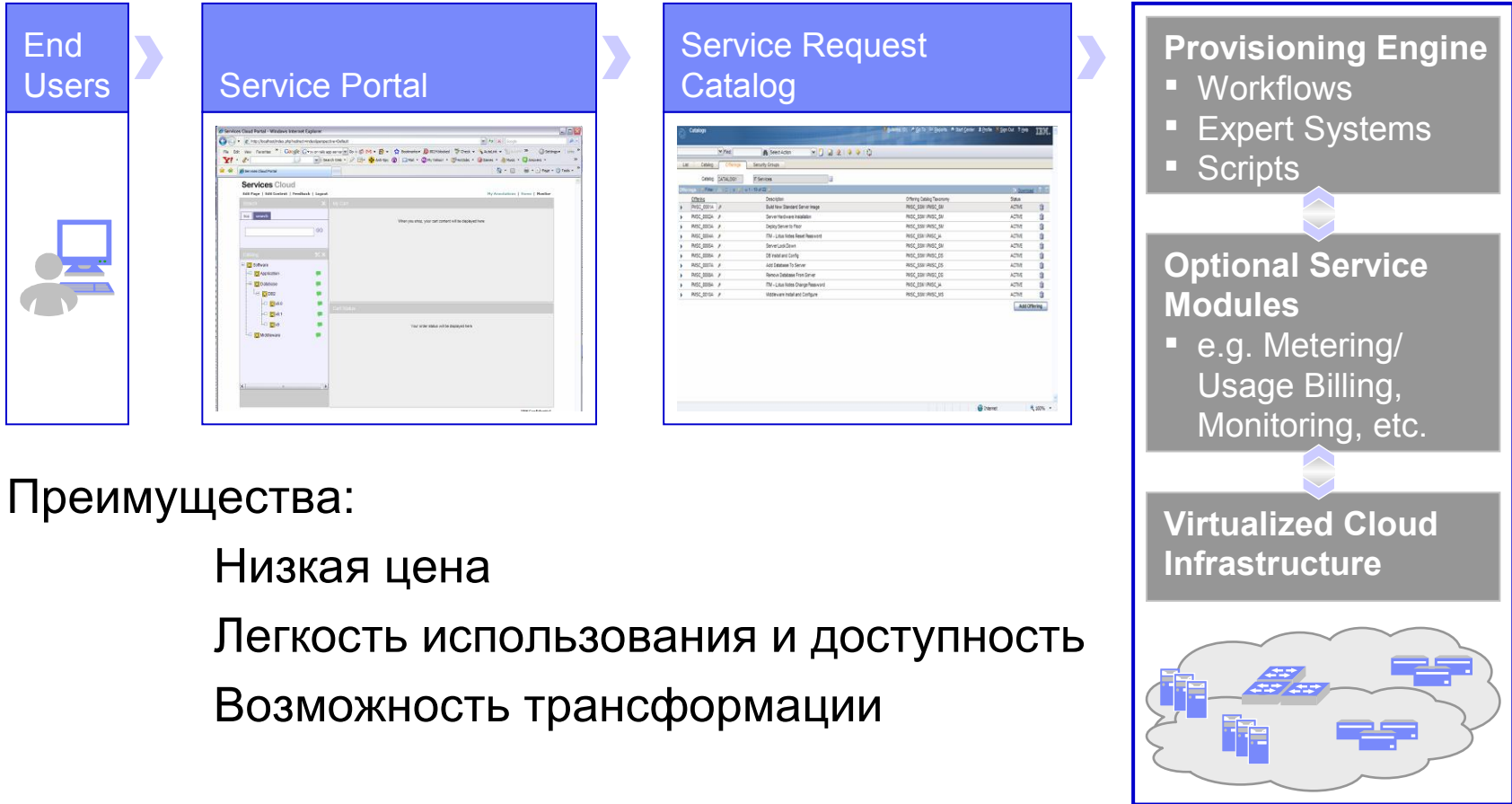
Шаг 3: Анализ загрузки ИТ инфраструктуры



Шаг 4: Выбор оптимального соотношения Моделей Доставки сервисов



Step 5: Реализация «Облачных» вычислений путем стандартизации



Преимущества:

Низкая цена

Легкость использования и доступность

Возможность трансформации

Lockheed Martin Corporation

Accelerates mission focused SOA solutions with a cloud computing infrastructure

Business challenge:

Lockheed Martin sought to simplify and accelerate the process of designing, developing and rapid prototyping mission focused applications based on service oriented architecture, while providing a demonstration and experimentation environment for its customers. Its goal is to move SOA beyond the buzzword and into design patterns organized as engineering templates, business development collateral, and industry best practices that represent near-deployable solutions.

Solution:

To address these challenges, IS&GS established the SOA Competency Center providing a cloud computing infrastructure for early-stage development of SOA solutions with a portfolio of SOA-enabling software products from its partners including IBM.

Benefits:

- Bullet Advanced software consulting and training: *more business capture wins*
- Pre-built infrastructure and design patterns: *faster, lower-cost solution development*
- Hosting capability: *sustainment model for increased reuse across mission capabilities*

“One of our key vendor partners with respect to SOA is IBM. With the SOA Competency Center we improve our ability to communicate our needs directly with IBM in order to aggregate our skills and knowledge about SOA. We benefit from having a single entry point for our IBM partners to use.”

— Melvin Greer, Chief SOA Architect and Senior Research Engineer, Principal, Lockheed Martin IS&GS Advanced Technology Office

Solution components:

- IBM WebSphere® Business Modeler
- IBM WebSphere Process Server
- IBM WebSphere Enterprise Service Bus
- IBM WebSphere Message Broker
- IBM WebSphere Service Registry and Repository
- IBM WebSphere DataPower Integration Appliance XI50



Neighborhood Centers

Protects critical data with data protection services in a cloud computing model

Business challenge:

Human services agency Neighborhood Centers sought to replace its tape backup solution with more-reliable technology and enhance disaster recovery across its distributed systems.

Solution:

The agency teamed with IBM Information Protection Services to deploy a fully managed backup solution. Data is now backed up daily to a facility 1,200 miles away from the data center.

Benefits:

- Provides peace of mind and cuts backup costs
- Improves branch workers' ability to protect critical data through automated daily data backups
- Supports business continuity strategy through data protection at a remote location

“From a C-level perspective, the main benefit is being able to sleep at night.”

— Thomas R. Comella,
Vice President of Technology
and Information Systems and CIO,
Neighborhood Centers, Inc.

Solution components:

- Business continuity and resiliency services
- IBM Information Protection Services



IBM's approach is based on our own transformation

IBM IT Transformation

- From 2002 through 2007, IBM's own IT investments delivered a cumulative benefit yield of approximately \$4 billion. For every dollar invested, we saw a \$4 cumulative benefit.

	1997	Today
CIOs	128	1
Host data centers	155	7
Web hosting centers	80	5
Network	31	1
Applications	15,000	4,700

Data Center Efficiencies Achieved

- Consolidation and virtualization - thousands of servers onto approximately 30 IBM System z™ mainframes.
- Additional virtualization leveraging System p, System x and storage across enterprise.
- Substantial savings being achieved in multiple dimensions: energy, software and system management and support costs.



Project Big Green

- The virtualized environment will use 80% less energy and 85% less floor space.
- 2X existing capacity, no increase in consumption or impact by 2010.

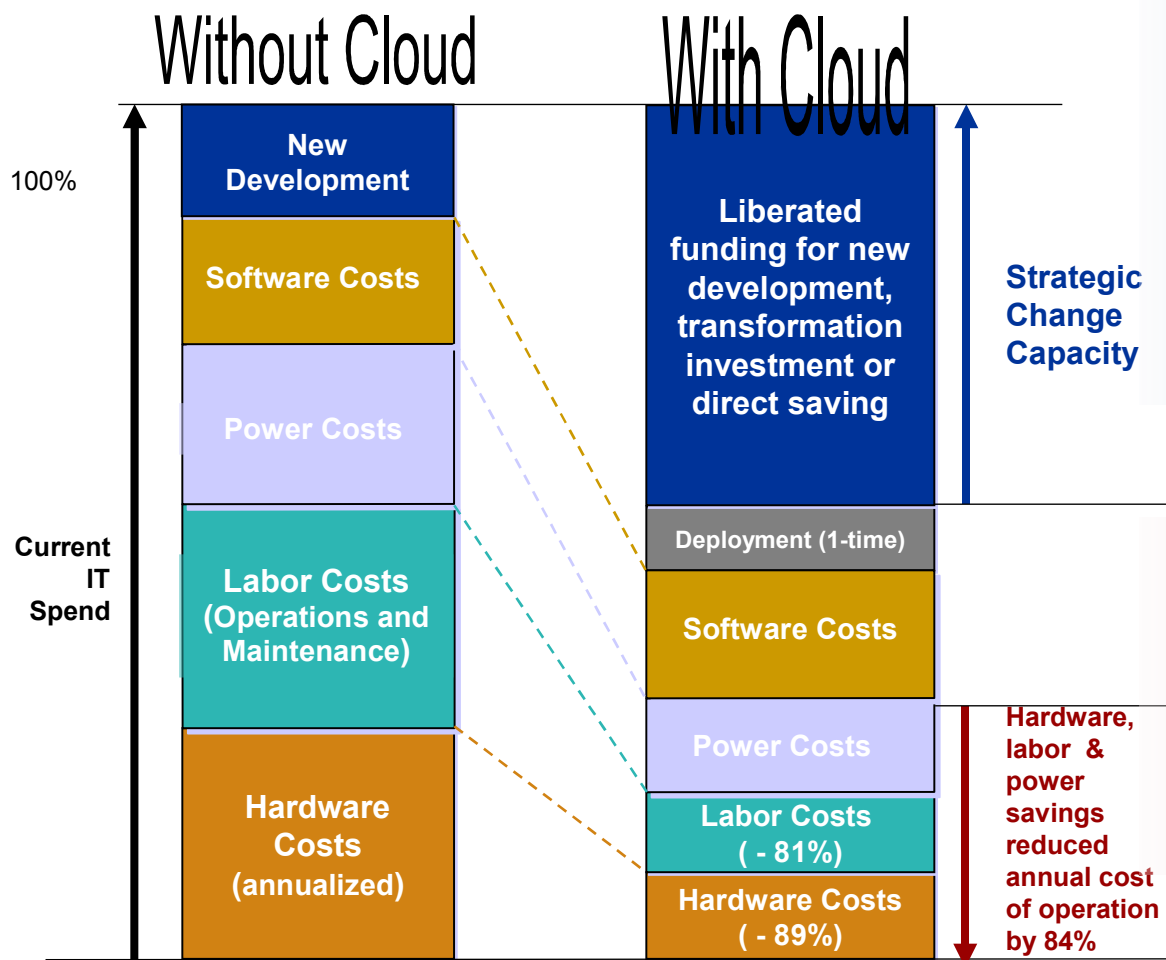


Cloud-enabled on demand IT delivery solution

- Self-service for 3,000 IBM researchers across 8 countries.
- Real time integration of information and business services.



IBM Technical Adoption Program (TAP)—ROI Анализ



Reduced Capital Expenditure

Reduced Operations Expenditure

Additional Benefits

Reduced risk, less idle time, more efficient use of energy, acceleration of innovation projects, enhanced customer service

Business Case Results:

**Annual savings: \$3.3M (84%)
from \$3.9M to \$0.6M**

Payback Period: 73 days
 Net Present Value (NPV): \$7.5M
 Internal Rate of Return (IRR): 496%
 Return On Investment (ROI): 1039%

Hardware, labor & power savings reduced annual cost of operation by 84%

Выводы...

- Облачные вычисления – это о движении к новой модели в эволюции Информационных Технологий
- Облачные вычисления – это реальность
- Экономический эффект от private Облачных вычислений – выглядит более чем убедительным
- IBM предлагает выбор схемы развертывания – наиболее удобной для Вас

Больше информации?

- <http://www.ibm.com/cloud>
- <http://www.ibm.com/developerworks/spaces/cloud>

- Вопросы?