Welcome to:

BAO and Cloud Overview

Unit Objectives

After completing this unit, you should be able to:

- Understand the importance of the relationship between cloud and business analytics

- Explain the advantages of analytics in business

- Identify the role of analytics in marketing, finance, HR etc.

- Describe IBM's vision for cloud analytics and current trends

What this unit is about

- This unit provides the concept of relationship between cloud and business analytics importance and advantages of analytics in business. Gain knowledge on identify the role of analytics in smarketing, finance, HR etc. This unit helps to learn IBM's vision for cloud analytics and current trends are presented here.

BAO and cloud overview

- Analytics is big business, holding the potential to identify subtly emerging patterns that allow companies to nimbly respond to shifting markets ahead of their competition.

- The book, Money ball, tells the story of the Oakland Athletics and how they changed baseball by leveling the playing field with cash-rich teams through the innovative use of analytics.

- Businesses that build strong analytically oriented teams can play "money ball" by adopting new ways to use information and new ways to leverage the power of the cloud to challenge conventional wisdom and jump ahead of the competition.

Figure: BAO and cloud overview

The case for cloud analytics

- The "Moneyball" phenomenon (using analytics to challenge conventional wisdom and change the game) has made its way through the business community like the way it has influenced global professional sports such as soccer and hockey.

- The influence of analytics in sport has been matched in business as well.

- For example, in the Harvard Business Review article, "The Future of Shopping," the success of traditional retailers is portrayed to be dependent on their ability to implement disruptive technologies such as omnichannel retailing.
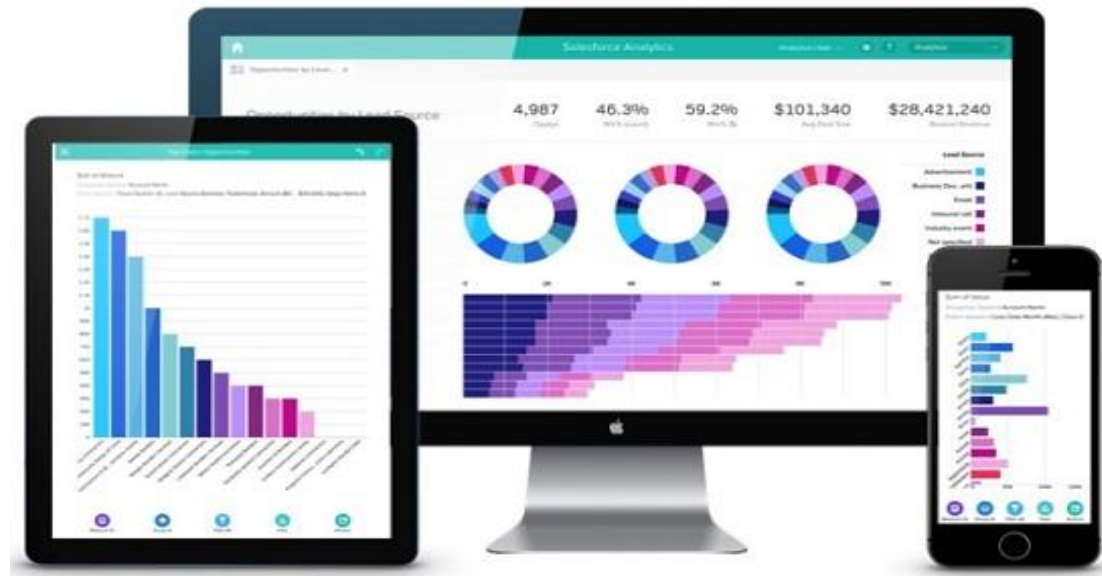

Figure: The case for cloud analytics

New technologies driving business change

Technology Trends Driving Business to Customer Interaction

Mobile Revolution: Smart Devices rapidly proliferating

Next Best Action

Social Media Explosion: Interconnected business and consumer groups

Lifetime Value

Hyper Digitization: Digital media growth across multiple channels

Deep Insight

Figure 1: Mobility, social media, increasing digitization, analytics and cloud computing capabilities are driving broad business model changes, including the way that corporations personally interact with customers and suppliers throughout the value chain.
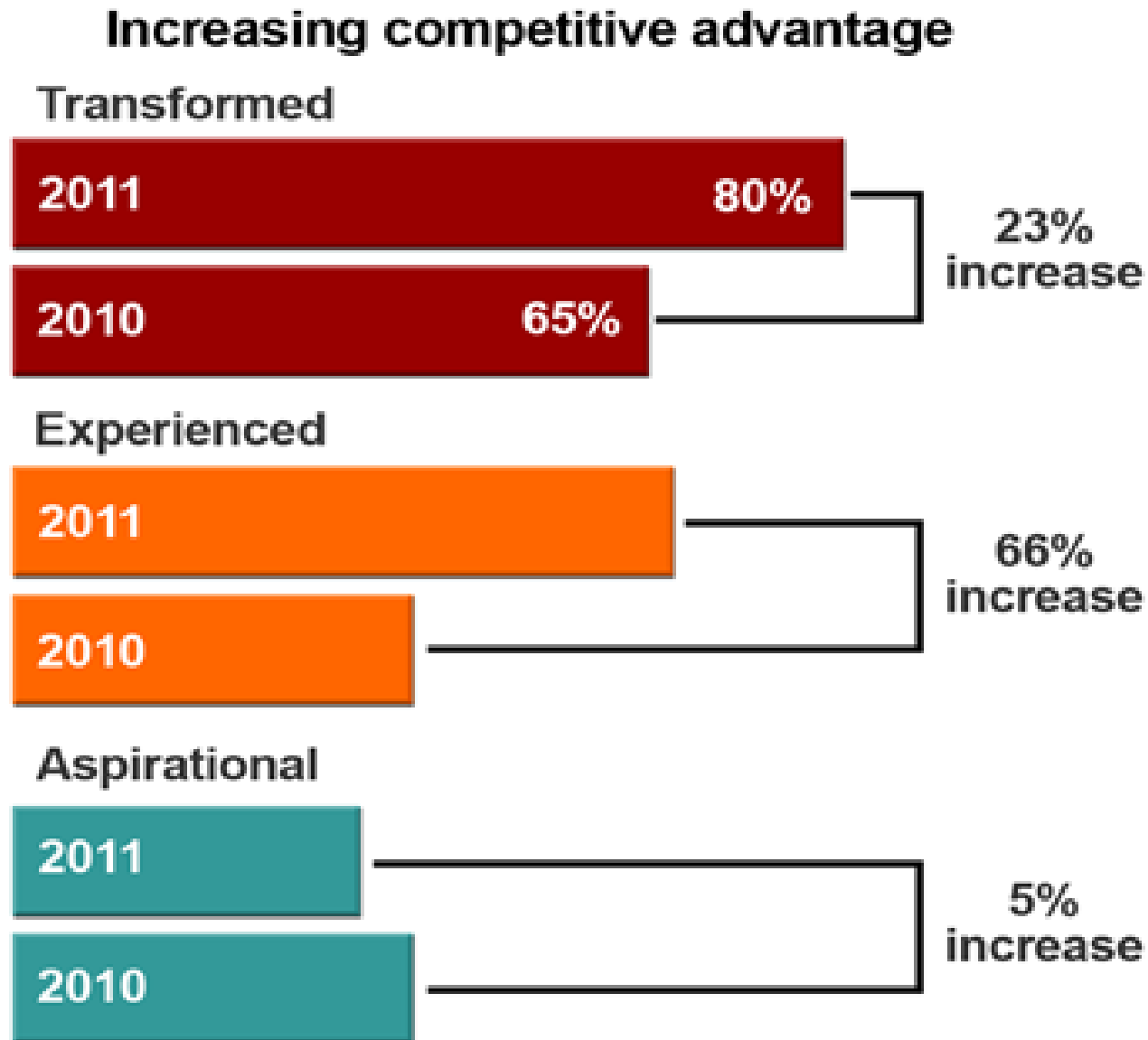
- Figure: New technologies driving business change

Figure: Use of analytics for competitive advantage

Figure 3: How cloud computing can help to address key analytic challenges

Figure: Analytics can help to organization

Business Edge of cloud computing

Cost Flexibility:

- Cloud computing introduces new pricing models for acquiring capabilities and resources. Businesses can pay for what they need instead of paying upfront for services.

- The pricing models for cloud computing can make it possible to deliver insights to a broader set of users or provide more computing resources when needed and then scale down when the resources aren't necessary.

- It also makes it easier to do shorter-term projects or proof of concepts for justifying larger programs.

Figure: Business Edge of cloud computing

Engagement of cloud analytics

Opportunities for cloud-based analytics

- Enterprises that are going to drive change with business analytics tend to start in one of four areas:

  – Grow, retain and satisfy customers.

  – Increase operational efficiency.

  – Transform financial processes.

  – Manage risk, fraud and regulatory compliance.

Disciplined approach to analytics

Disciplined approach to analytics

Transform
through analytics for
breakaway results

Align
your organization
around information

Anticipate
see, predict and shape
business outcomes

Act
with confidence at
the point of impact to
optimize outcomes

Learn
through analytics for
breakaway results
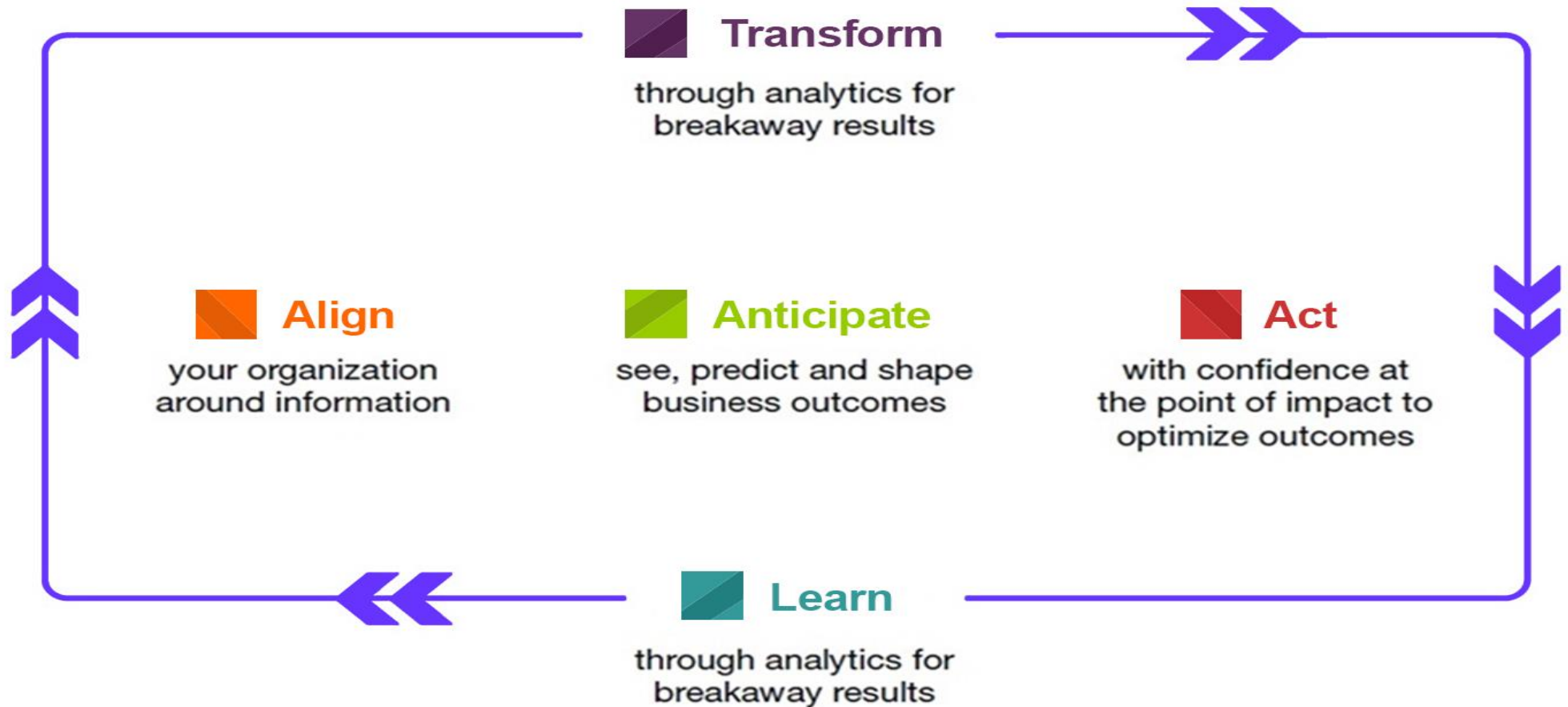
Figure 4: Using insight to achieve breakthrough performance

Figure: Disciplined approach to analytics

Usage of cloud analytic in business areas

- So how can cloud-based analytics helpline of business managers reach their goals?
  - Marketing
  - Finance
  - Operations
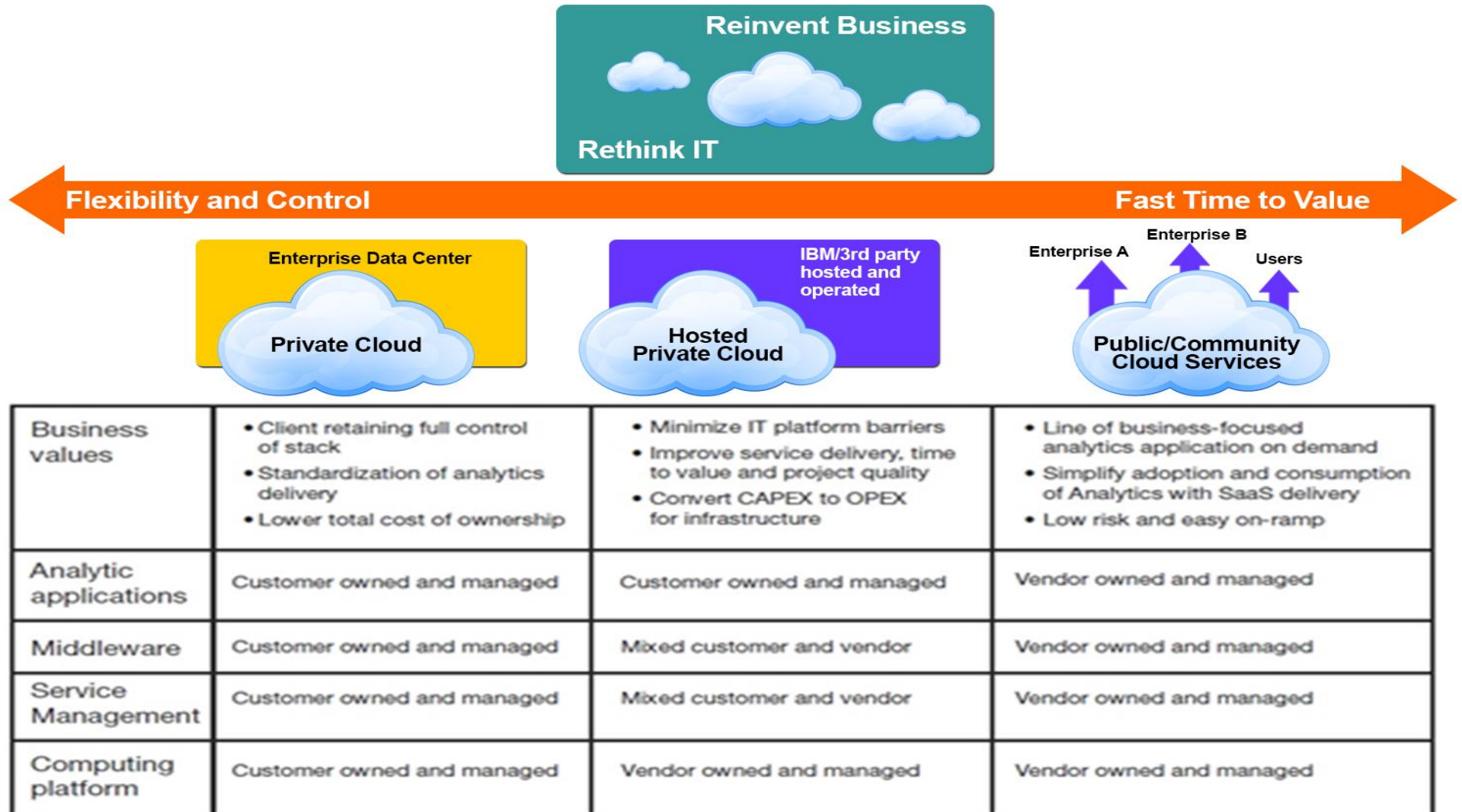 - Governance, risk and compliance

Figure: Usage of cloud analytic in business areas

Cloud analytic deployment model

- Private clouds

- Public clouds

- Hosted private clouds

Cloud service and delivery models

Reinvent Business

Rethink IT

Flexibility and Control ←——————————————————————→ **Fast Time to Value**

Enterprise Data Center — **Private Cloud**

IBM/3rd party hosted and operated — **Hosted Private Cloud**

Enterprise A   Enterprise B   Users — **Public/Community Cloud Services**

	Private Cloud	Hosted Private Cloud	Public/Community Cloud Services
Business values	• Client retaining full control of stack • Standardization of analytics delivery • Lower total cost of ownership	• Minimize IT platform barriers • Improve service delivery, time to value and project quality • Convert CAPEX to OPEX for infrastructure	• Line of business-focused analytics application on demand • Simplify adoption and consumption of Analytics with SaaS delivery • Low risk and easy on-ramp
Analytic applications	Customer owned and managed	Customer owned and managed	Vendor owned and managed
Middleware	Customer owned and managed	Mixed customer and vendor	Vendor owned and managed
Service Management	Customer owned and managed	Mixed customer and vendor	Vendor owned and managed
Computing platform	Customer owned and managed	Vendor owned and managed	Vendor owned and managed

Cloud deployment attributes

Deployment Attributes	Private Cloud	Hosted Private Cloud (I/PaaS	Public Community (SaaS)
Available expertise to develop analytic applications develop analytic application	In house	In house	Prebuilt application available
Available skills to manage analytic platform	In house	Available from vendor	Available from vendor
In house data center capacity	No issues with capacity and provisioning	Unavailable, slow to provision	Unavailable, slow to provision
Workload performance characterstic	Production Mission critical, low latency	"Good enough" production, Pre-production Some latency can be tolerated	Service level agreement (SLA) backed production Some latency can be tolerated
Data: Location	On premises	Cloud resident, supplied by partners, Transferred from on premises	Cloud resident, supplied by partners, Transferred from on premises
Data: Volume	Large	Smaller	Smaller
Data: Privacy	Governed by regulations	Governed by regulations with mitigation measures	Governed by regulations with mitigation measures
Data: Persistency	Retention policy managed in house	Options available from vendor	Managed by vendor

Figure 6: Cloud-based analytic deployment considerations

- Figure:

Cloud-based analytics disrupting business models

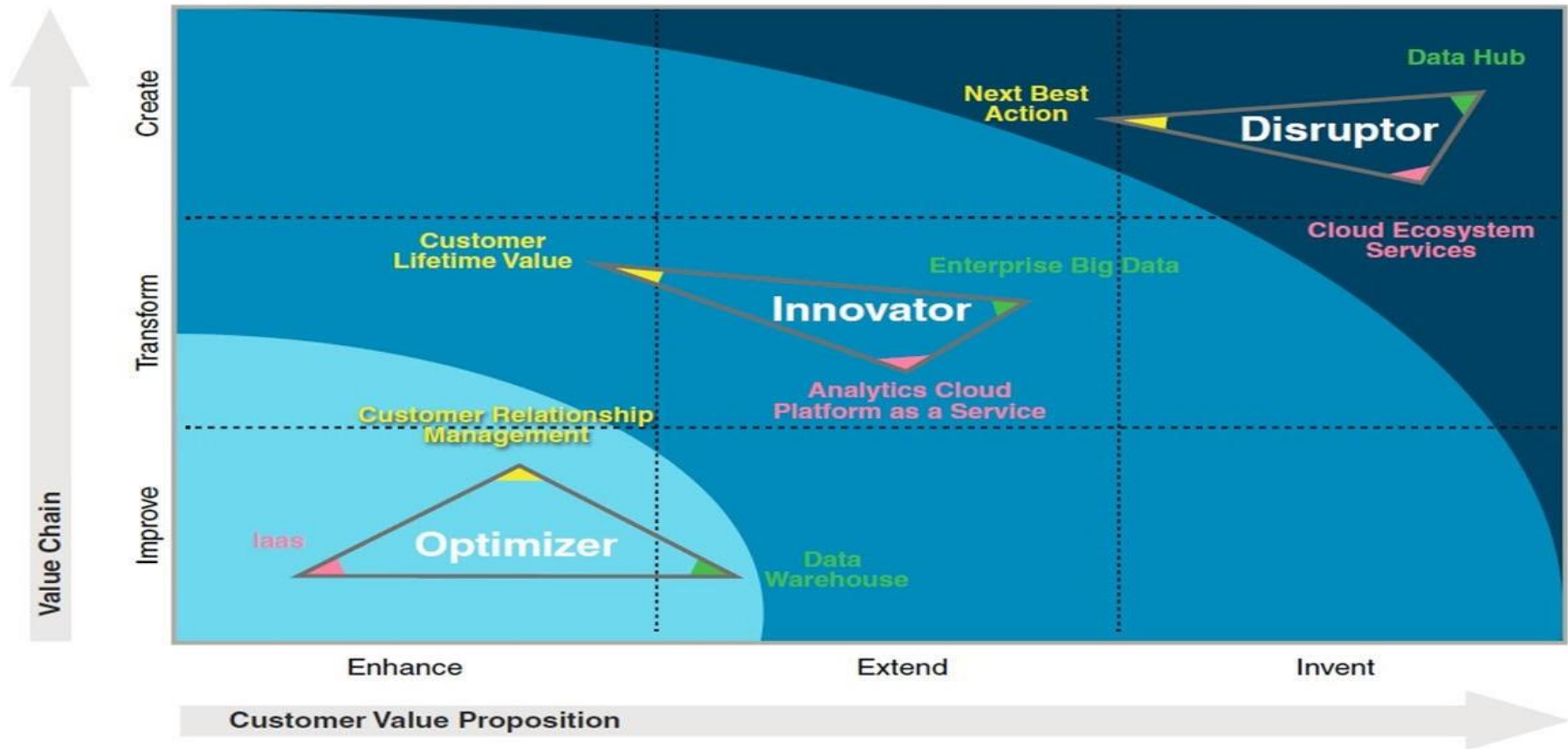Using cloud analytics to drive competitive advantage in a marketing organization.

Figure 7: The Cloud Enablement Framework is used to help organizations objectively assess their cloud analytics capabilities. Depicted are examples of how a marketing organization could rank itself based on the three attributes of customer collaboration (yellow), analytics service adoption (green) and cloud service adoption (pink).

- Figure: Cloud-based analytics disrupting business models

Characteristics of optimizers, innovators and disruptors

Sample Characteristics of Optimizers, Innovators and Disruptors for Marketing Organizations

	Optimizer	Innovator	Disruptor
Customer Intimacy			
Value drivers	Customer relationship management – Performs basic sales, service and marketing functions	Customer lifetime value – Implements CRM decisions based on long-term contribution margin	Next best action – Presents useful customers choices based on probability of success and margin to help meet financial goals
Technology sophistication	Single channel (independent) automation of key CRM functions	Multi-channel (integrated) marketing and customer service for web, mobile and smart device platforms	Omnichannel collaboration – Mines data from physical and online channels and correlates external data to optimize customer value
Analytics Service Adoption			
Skills*	• Analysts work in business units • Focus on cross training and hiring required skills	Combines line of business with centralized units that provide advanced analytical skills	Find and use specialized talent from ecosystem when it is unavailable in house, while promoting innovation (for example, new patents)

Data scope	• Data is in siloed data warehouse
	• Elements of big data in play:
	  - Volume: Extensive use of transaction data
		Elements of big data in play:
		• Variety: Some unstructured data
		• Velocity: Real-time data
		• Volume: Enterprise integrated data warehouse in place
			• Enterprise information architecture.*
			• Governance in place to include external data and improve data quality based on learning*
			• Full use of big data:
			  - Variety: Text, image, in-store, digital
			  - Velocity: Combined with complex event processing
			  - Volume: use of data hub and data services (3rd party) in sales and marketing activities

Analytics progression	Align and act: • Dashboards on progress • Full suite of business intelligence (BI) tools adopted	Align, anticipate, act • Predictive models used to determine customer lifetime value and behaviors • BI tools integrated into business workflows	Transform and learn • Prediction services woven into customer direct sales processes to influence customer transactions • Models learn from buy/sell activity
Cloud Service Adoption			
Platform standards	Significant use of IaaS, data warehouse and ERP/CRM platforms	Business units share a common cloud-based analytical service platform	• Adopts hybrid cloud platform to access data hubs, specialized applications and appliances • Utilizes specialized services from federated cloud ecosystems
Process harmonization	Adopts industry standards on top of virtualized infrastructure	Adopts solutions for specific analytic workloads like predictive and unstructured data analysis	Buys business outcomes as a service

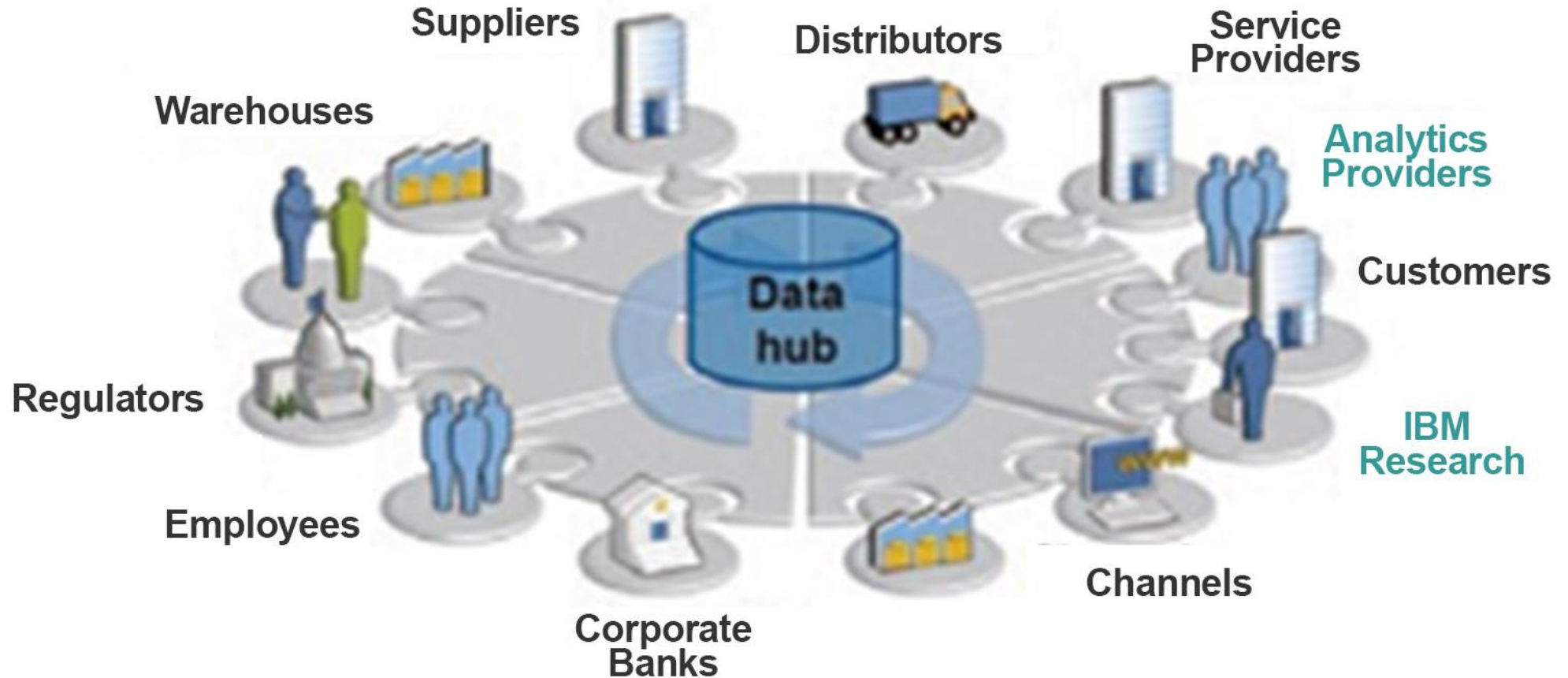Figure: Characteristics of optimizers, innovators and disruptors

Figure 9: Ecosystems of data and analytics on a cloud hub

Figure: The emergence of data hubs

Data platform approach

Traditional approach
Structured, analytical, logical, and historical

New approach
Creative, holistic thought, intuition, sense and respond

Data Warehouse

Hadoop Streams

Transaction Data

Web Logs

Internal App Data

Structured Repeatable Linear

Enterprise Integration

Unstuctured Exploratory Iterative

Social Data

Mainframe Data

Text Data: Emails

OLTP System Data

Sensor Data: Images
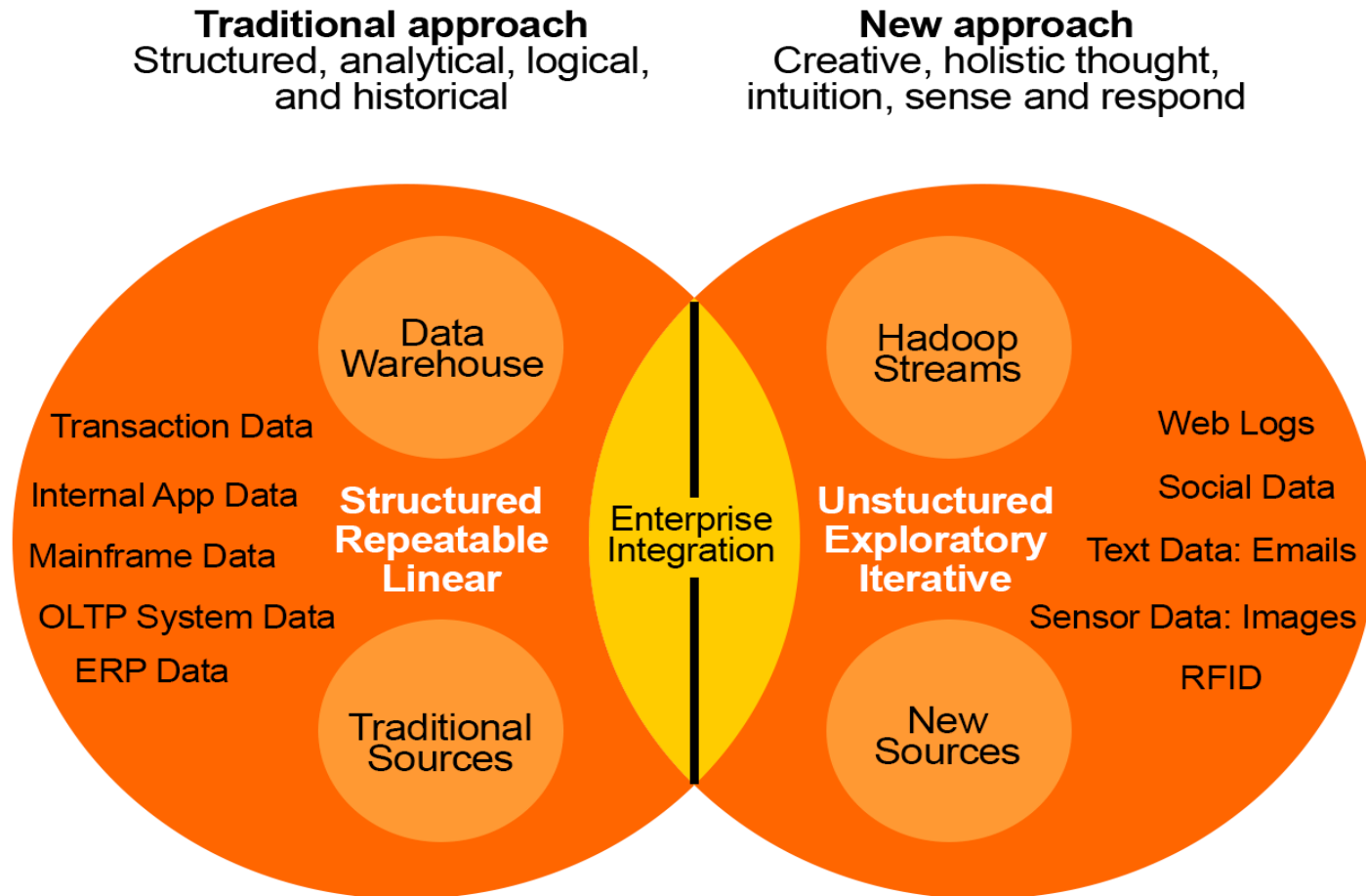
ERP Data

RFID

Traditional Sources

New Sources

Figure 10: Comparisons of traditional and new approaches in next-generation cloud analytics platform

Figure: Data platform approach

Supporting technologies
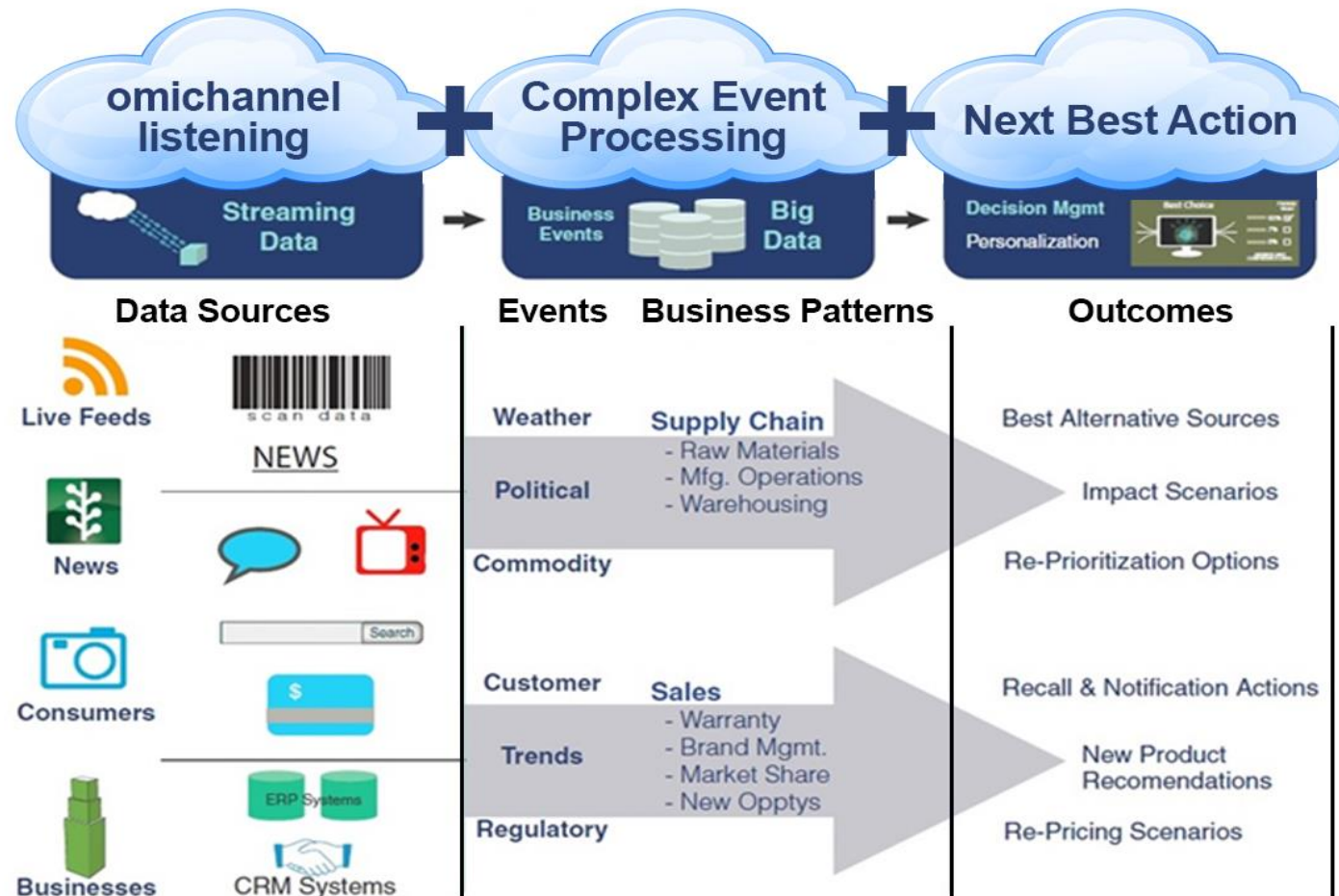
Figure 11: How analytics are now being realized through the dynamically scalable and low cost processing power afforded by cloud computing and a) streaming software that can listen for real-time events which impact a business, b) complex event processing software that looks for correlations between disparate data sources and c) next best action software, which can present customers and businesses with choices that align to their needs.

Figure: Supporting technologies

IBM smarter analytics

Analytics SaaS / DaaS

Characteristics

Domain analytics on cloud resident Big Data, 3rd party data, community data

Low risk easy on ramp especially for SMB and GMU

Business Analytics

Hybrid Cloud
Characteristics

- New analytic model
- Data enrichment with Industry Insight
- Fixes

- Usage patterns for improvements
- Workload spillover

Analytics Appliance / Private Cloud

Characteristics

- On premise Big Data
- Data privacy
- Stdn. of BA delivery
- Rapid deployment
- Self service

PaaS / IaaS
Characteristics

- Cost Effectiveness
- Agility
- Elasticity

Business Analytics
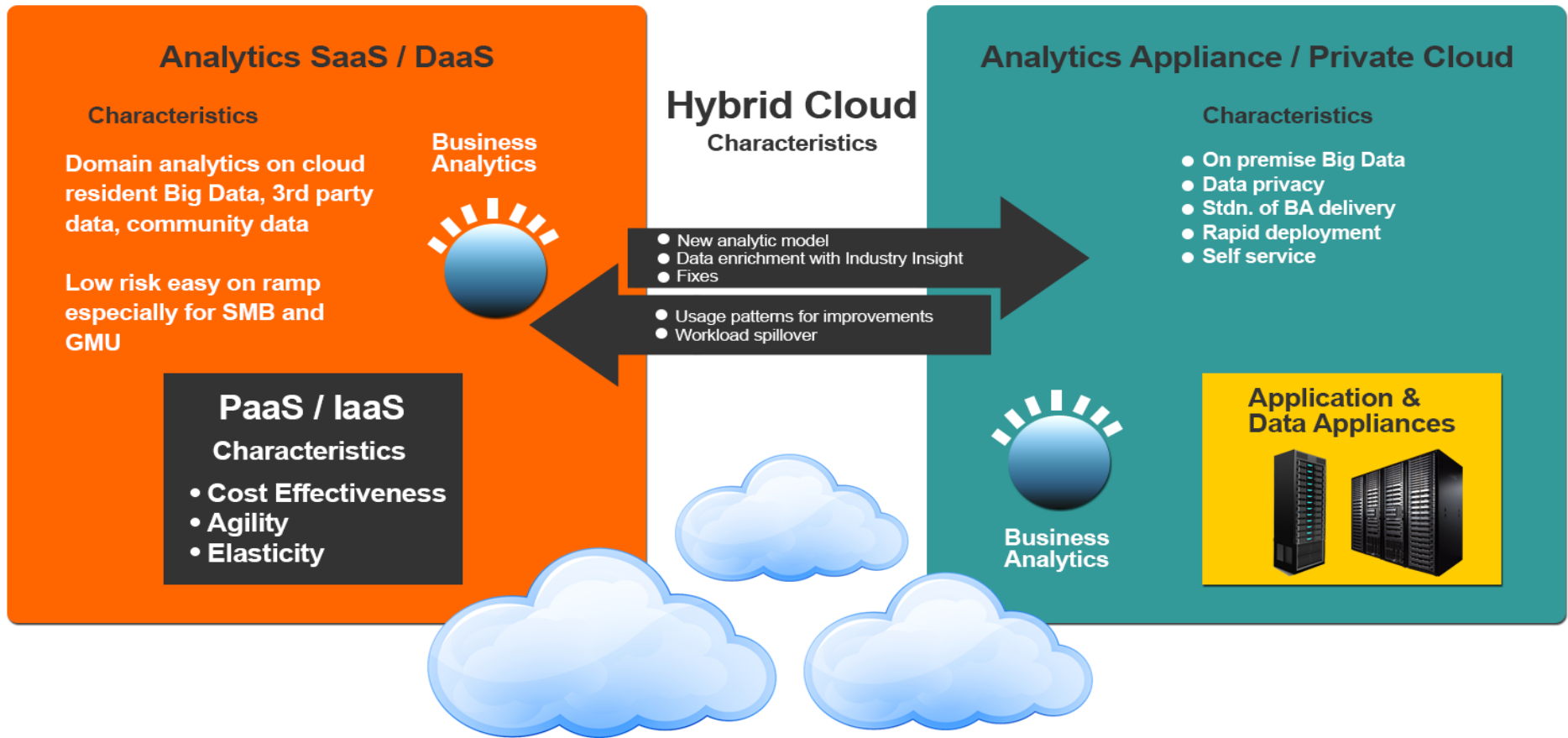
Application & Data Appliances

Figure 12: Hybrid cloud platforms provide the right blend of security and optimized workload performance to support complex business process enabled by analytic services

Figure: IBM smarter analytics
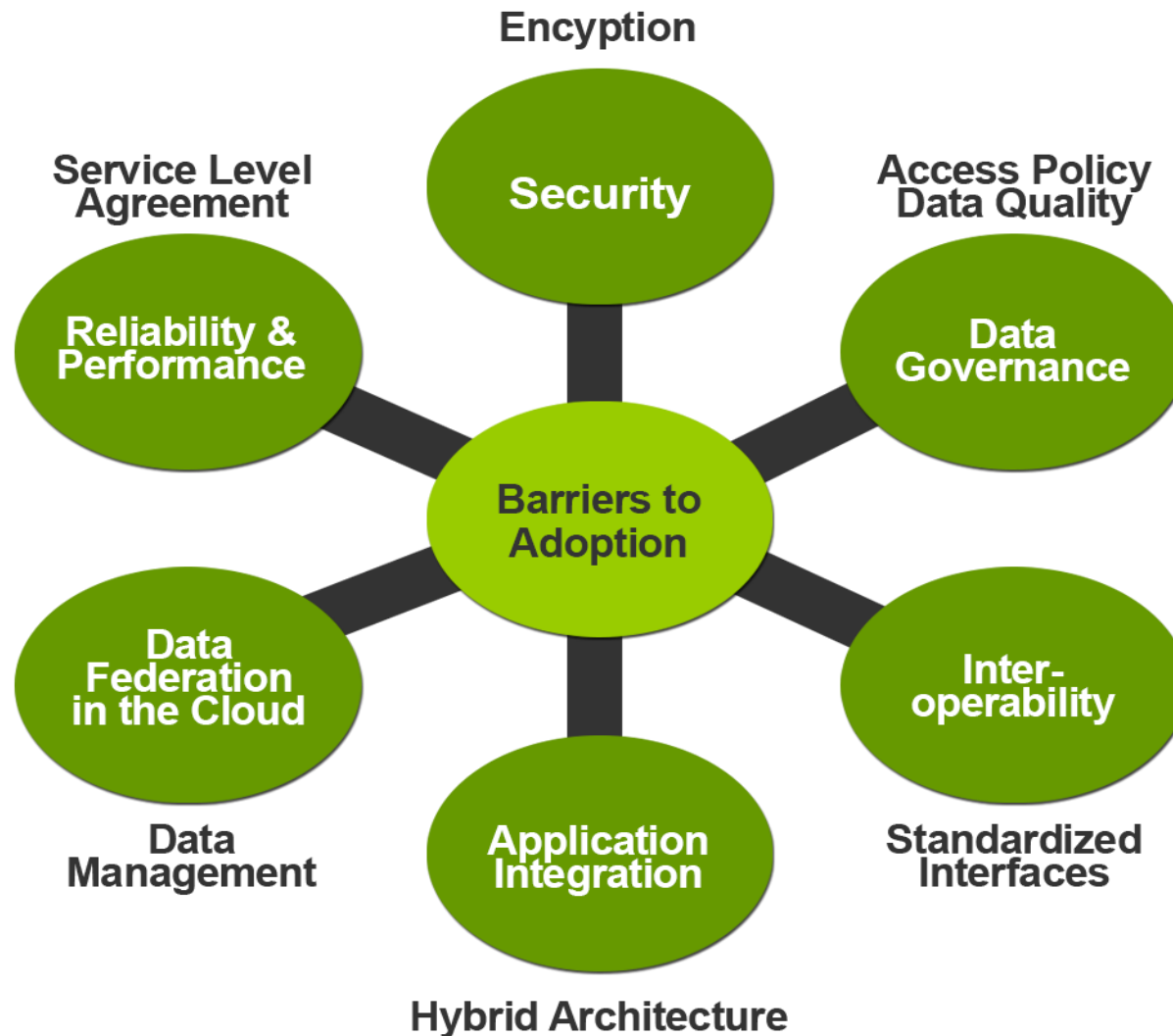
Cloud adoption barriers removal

Figure 13: Barriers to cloud adoption for analytic workloads and possible mitigation strategies

Figure: Cloud adoption barriers removal

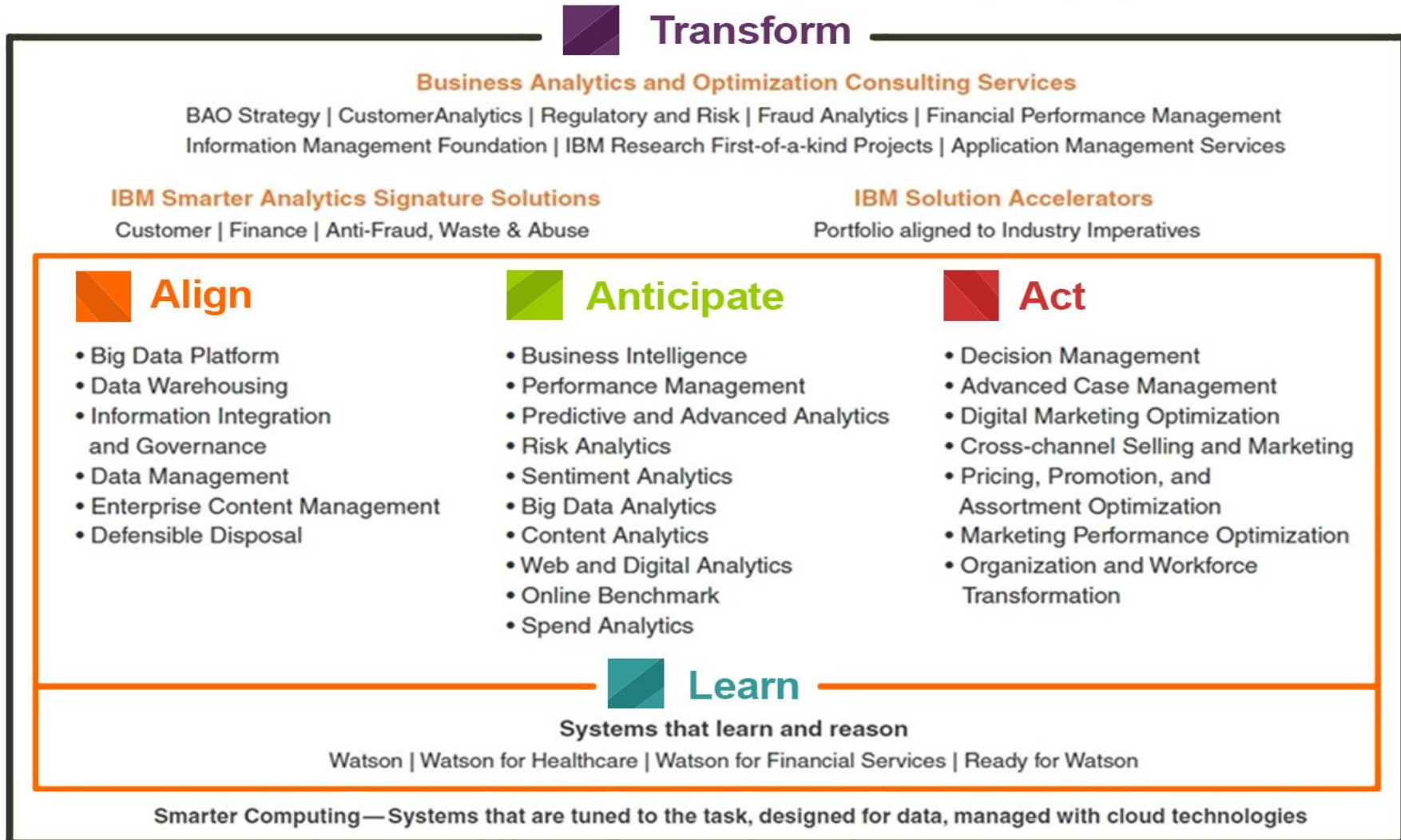**IBM Business Analytics and Optimization (BAO) capabilities**

Transform

Business Analytics and Optimization Consulting Services

BAO Strategy | CustomerAnalytics | Regulatory and Risk | Fraud Analytics | Financial Performance Management
Information Management Foundation | IBM Research First-of-a-kind Projects | Application Management Services

IBM Smarter Analytics Signature Solutions
Customer | Finance | Anti-Fraud, Waste & Abuse

IBM Solution Accelerators
Portfolio aligned to Industry Imperatives

Align
- Big Data Platform
- Data Warehousing
- Information Integration and Governance
- Data Management
- Enterprise Content Management
- Defensible Disposal

Anticipate
- Business Intelligence
- Performance Management
- Predictive and Advanced Analytics
- Risk Analytics
- Sentiment Analytics
- Big Data Analytics
- Content Analytics
- Web and Digital Analytics
- Online Benchmark
- Spend Analytics

Act
- Decision Management
- Advanced Case Management
- Digital Marketing Optimization
- Cross-channel Selling and Marketing
- Pricing, Promotion, and Assortment Optimization
- Marketing Performance Optimization
- Organization and Workforce Transformation

Learn

Systems that learn and reason
Watson | Watson for Healthcare | Watson for Financial Services | Ready for Watson

Smarter Computing—Systems that are tuned to the task, designed for data, managed with cloud technologies

Figure 14: IBM's capabilities are designed to support a holistic approach to Smarter Analytics

Figure: IBM cloud analytics

IBM smart cloud
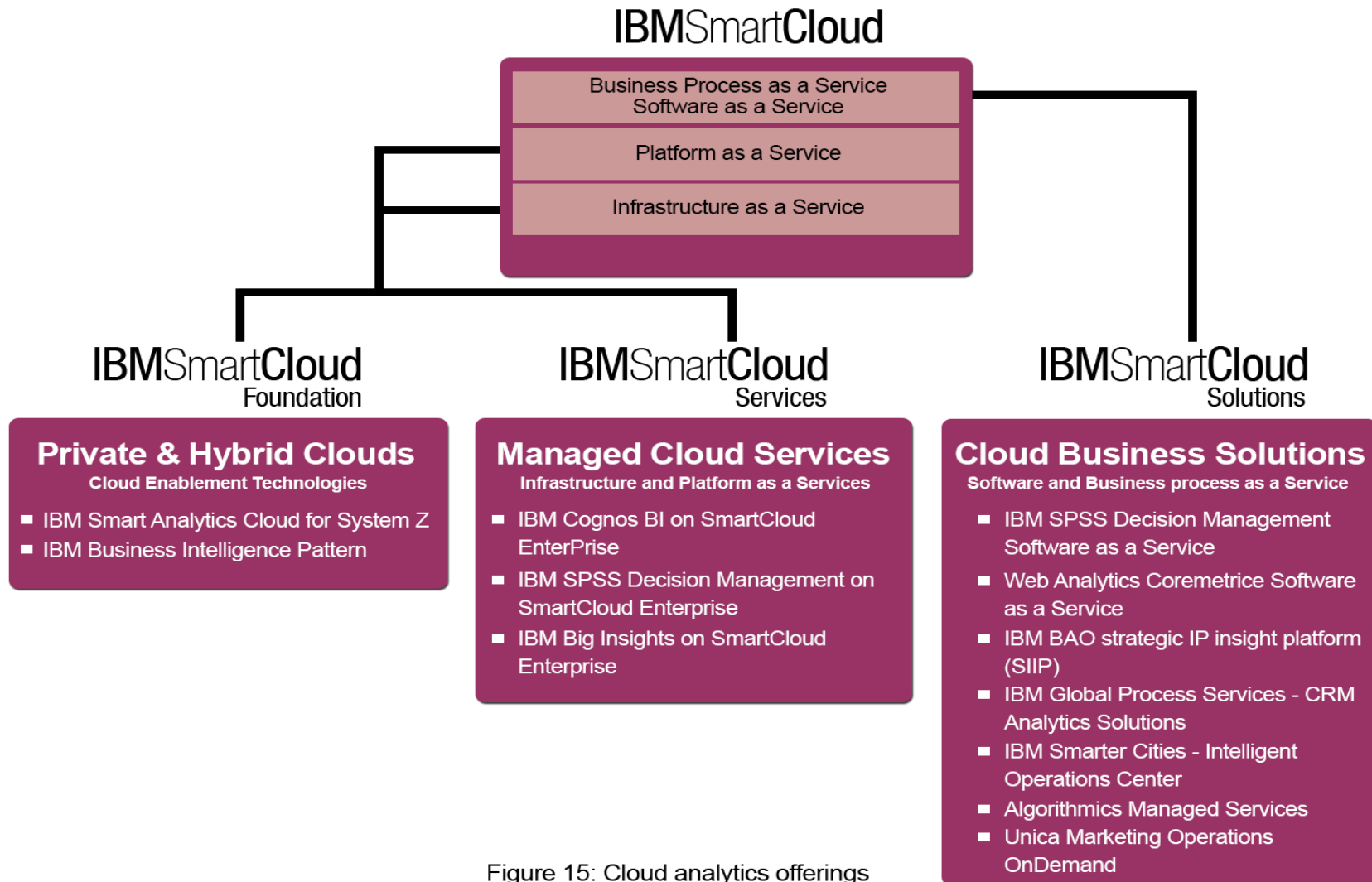
Figure 15: Cloud analytics offerings

Figure: IBM smart cloud

Multiple choice questions:

1. _____ adoption is a key for organizations who cannot afford to make the large initial investment in infrastructure that is often required to implement analytic solutions.
   a) Virtualization
   b) Cloud Computing
   c) Traditional teacher-student method of
   d) None

2. Which one will provide the enables organizations to deliver value more quickly
   a) A software
   b) A platform
   c) An infrastructure
   d) None

3. Which is a quality control discipline for assessing, managing, using, improving, monitoring, maintaining and protecting organizational information?
   a) Data governance
   b) Resource governance
   c) Data grievances
   d) Data relevance

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Fill in the blanks:

1. Disruptive business models, enabled by _____ technologies, will change the game of corporate sales and supply chain operations.

2. By using cloud analytics, to respond fast, to changes in market sentiment, retailers and manufacturers create a more _____ value chain.

3. _____ is changing the business model for many organizations and is forcing them to rethink the traditional way of providing IT services. It is also enabling organizations to come up with new ways to do business.

4. The term "cloud" can mean different things to different people. From a business perspective, it is a model for enabling _____ outcomes through the use of shared application and computing services.

True/False:

1. Analytics is no longer considered an option to enhance business, but a requirement in order to compete in today's volatile environment. True/False.

2. Cloud analytics provides the scalability needed to improve the speed and agility of decision making. True/False.

3. IBM Smart Cloud offers solutions designed to enable cloud computing at many different levels. True/False.

Fill in the blanks:

1. Disruptive business models, enabled by **<u>analytics and cloud</u>** technologies, will change the game of corporate sales and supply chain operations.

2. By using cloud analytics, to respond fast, to changes in market sentiment, retailers and manufacturers create a more **<u>agile and event-based</u>** value chain.

3. **<u>Cloud Computing</u>** is changing the business model for many organizations and is forcing them to rethink the traditional way of providing IT services. It is also enabling organizations to produce new ways to do business.

4. The term "cloud" can mean different things to different people. From a business perspective, it is a model for enabling **<u>cost-effective</u>** outcomes using shared application and computing services.

True / False:

1. Analytics is no longer considered an option to enhance business, but a requirement in order to compete in today's volatile environment. True.

2. Cloud analytics provides the scalability needed to improve the speed and agility of decision making. True.

3. IBM Smart Cloud offers solutions designed to enable cloud computing at many different levels. True.

Question bank

Two-mark questions:

1. Mention cloud services.
2. Define IBM smart cloud.
3. What is Private clouds.
4. Mention Cloud services characteristics.

Four-mark questions:

1. Explain in brief Data platform approach.
2. Explain in brief IBM cloud analytics.
3. Explain in brief The emergence of Data Hubs.
4. Explain in brief Characteristics of optimizers, innovators and disruptors.

Eight-mark questions:

1. Explain in detail Cloud adoption barriers removal.
2. Explain in detail Cloud adoption barriers removal

Unit summary

Having completed this unit, you should be able to:

- Understand the importance of the relationship between cloud and business analytics

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