



You know us because you depend on our technology every day.

# Customer Centric Network Management



Rafael Andrade  
Business Development Manager – Latin America

- Introduction
  - JDSU – A global company
  - A lot of change... but not enough change...
  
- The 20<sup>th</sup> Century – The Age of Network Management
  
- The 21<sup>st</sup> Century – The Age of Customer Service Experience Management
  
- Conclusions



**Employees: 4,600**

**Locations: 80+ sites globally**

**Global Presence: 164 countries**



**Annual Revenue: \$1.3B**

**Index Membership: S&P 500**



**Leader in LTE test**

**2010 WINNER**



# Change is Here – More Demand than Ever

By 2015...

767 Quintillion  
Bytes of Global IP Traffic \*

176 Q in  
2009



7 Billion  
Mobile-Connected Devices \*



12B All Connected Devices

18000  
5 Year Percentage  
Growth in Web Video  
Conferencing \*



91  
Percentage Share  
of Video in  
Consumer Traffic \*



# Change is Here – Complex & Unpredictable Usage



Traffic

Devices

Applications

Protocols



Cloud



Mobility



Media Access



Broadband

**50B**  
**devices**  
**by 2020**

Source: Ericsson



8G 12G 16G FCOE

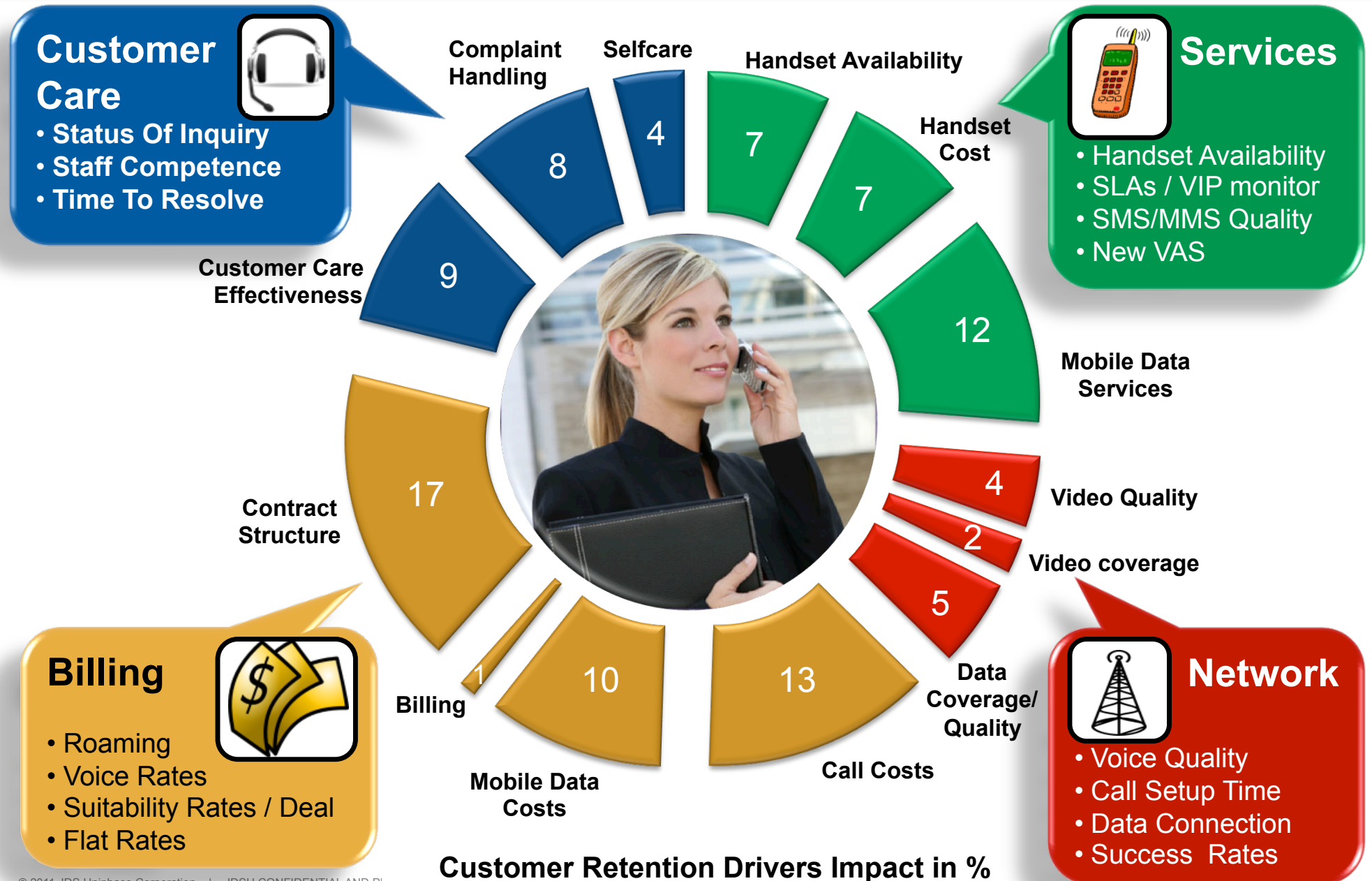
2G 3G 4G

HD 3D CDN IPTV

10G 40G 100G

**Increased Needs for an Intelligent and Relevant Cycle of  
Testing, Measuring & Monitoring**

# Change is Here – What is a Loyal Customer Today?



# Change is Here – Higher Demands on Operators



Adapt to Traffic Explosion while  
**Creating Services from the Intelligence** in the Network

Lower their  
CapEx and OpEx



Enable New  
Services..



**Exceed Customer Experience...Reduce Churn**

# **The 20<sup>th</sup> Century – The Old Age of Network Management**

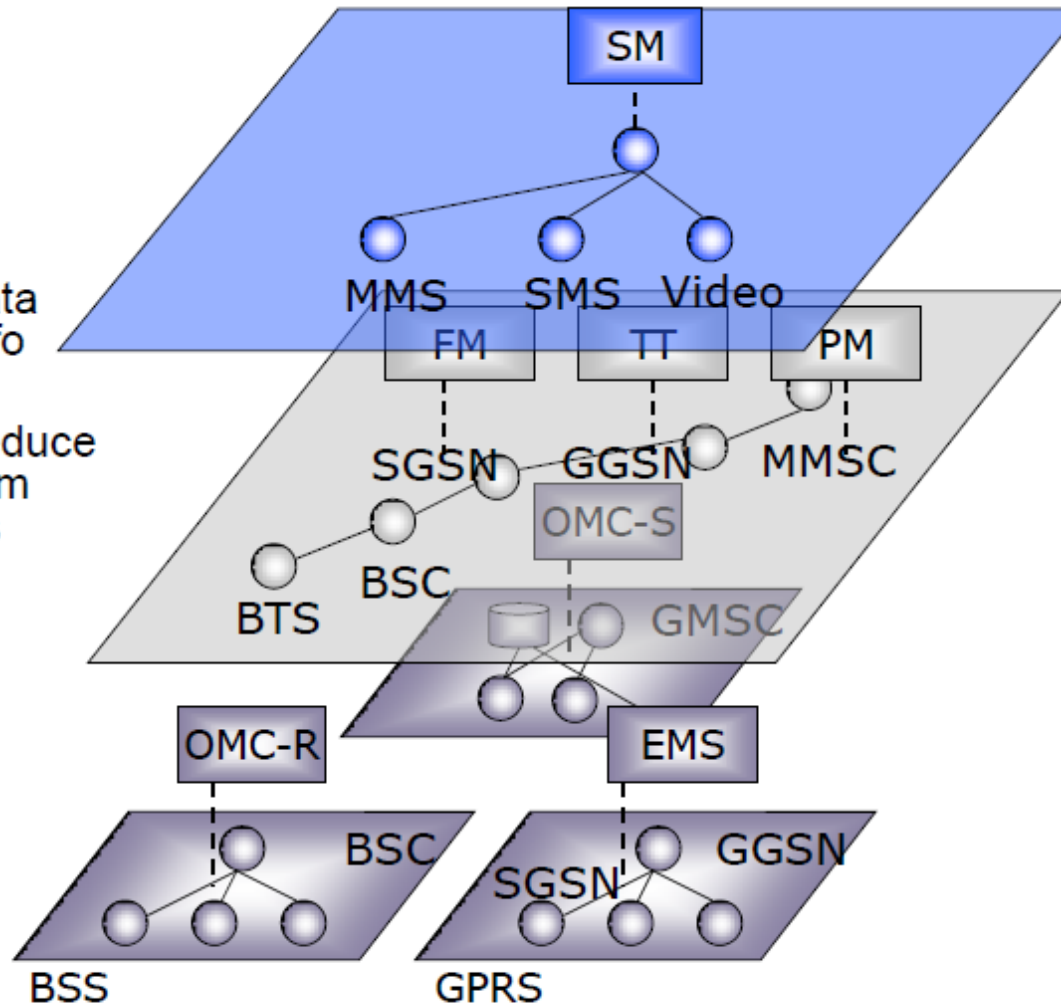
**“My network is more important than the user experience...”**



The philosophy here is simple... “if we optimize the network elements, the overall quality will be good enough”

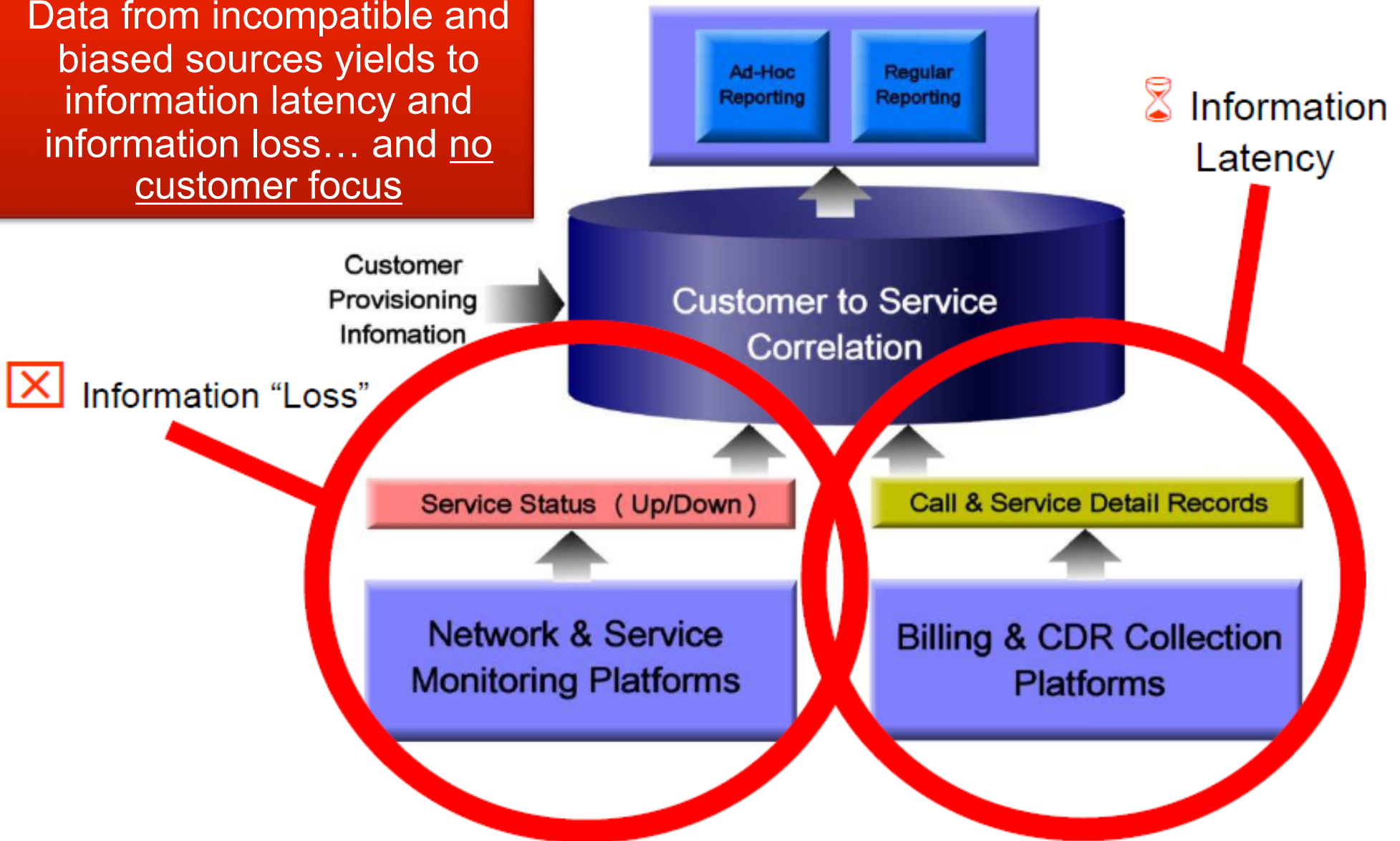
- Leverage existing network measurement data
- Try to combine additional data e.g. billing CDRs or CRM info
- Model services and try to deduce service quality indicators from underlying network statistics
- Complex and tenuous

This philosophy worked somewhat OK with simple and predictable services... not true anymore

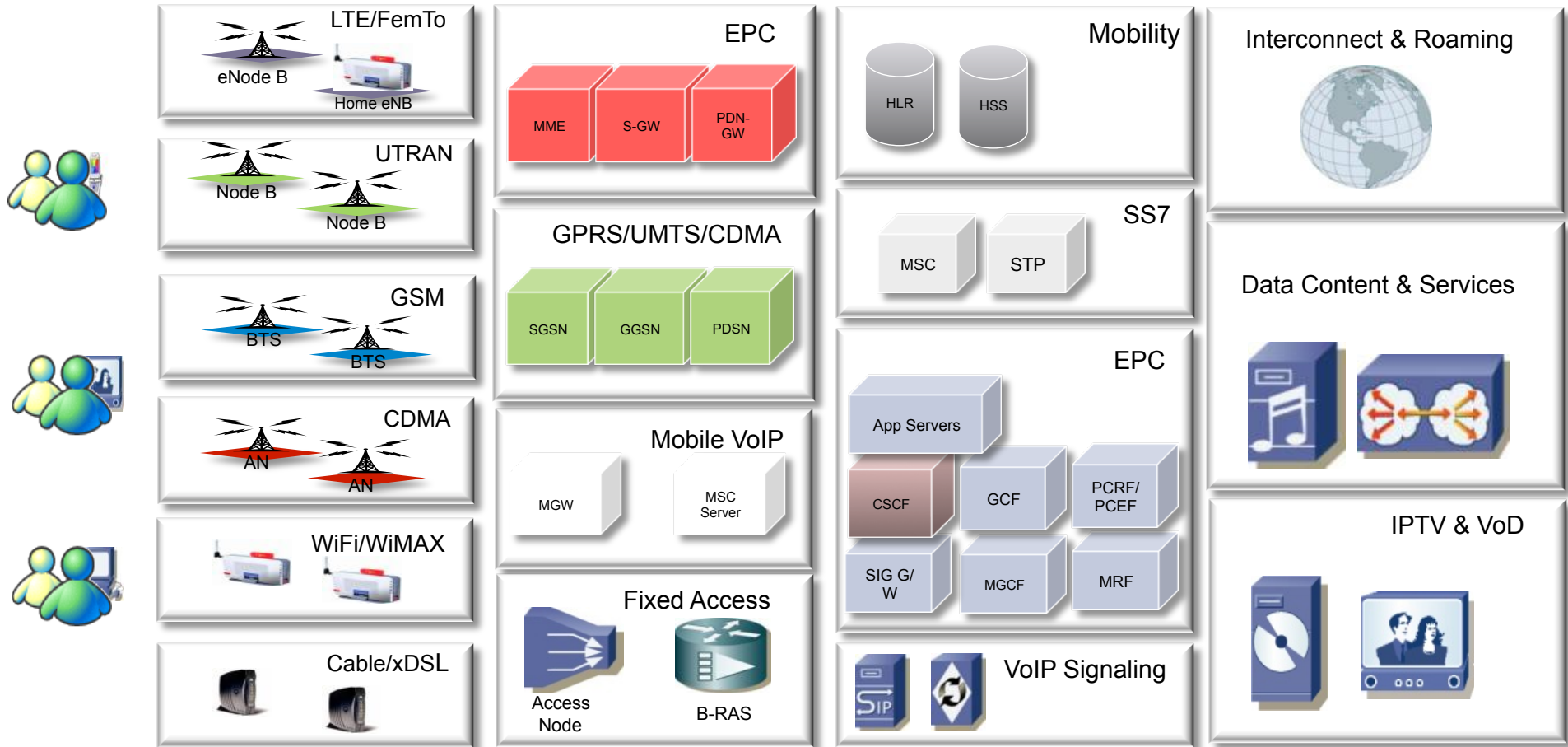


# Network Management – Indirect Customer Experience

Data from incompatible and biased sources yields to information latency and information loss... and no customer focus



# Network Management – Network Centric Approach



- Operational barriers... different groups have different goals
- Operations and engineering centered processes & tools
- KPIs for network elements & organizations
- Service KQIs are reactive and not actionable

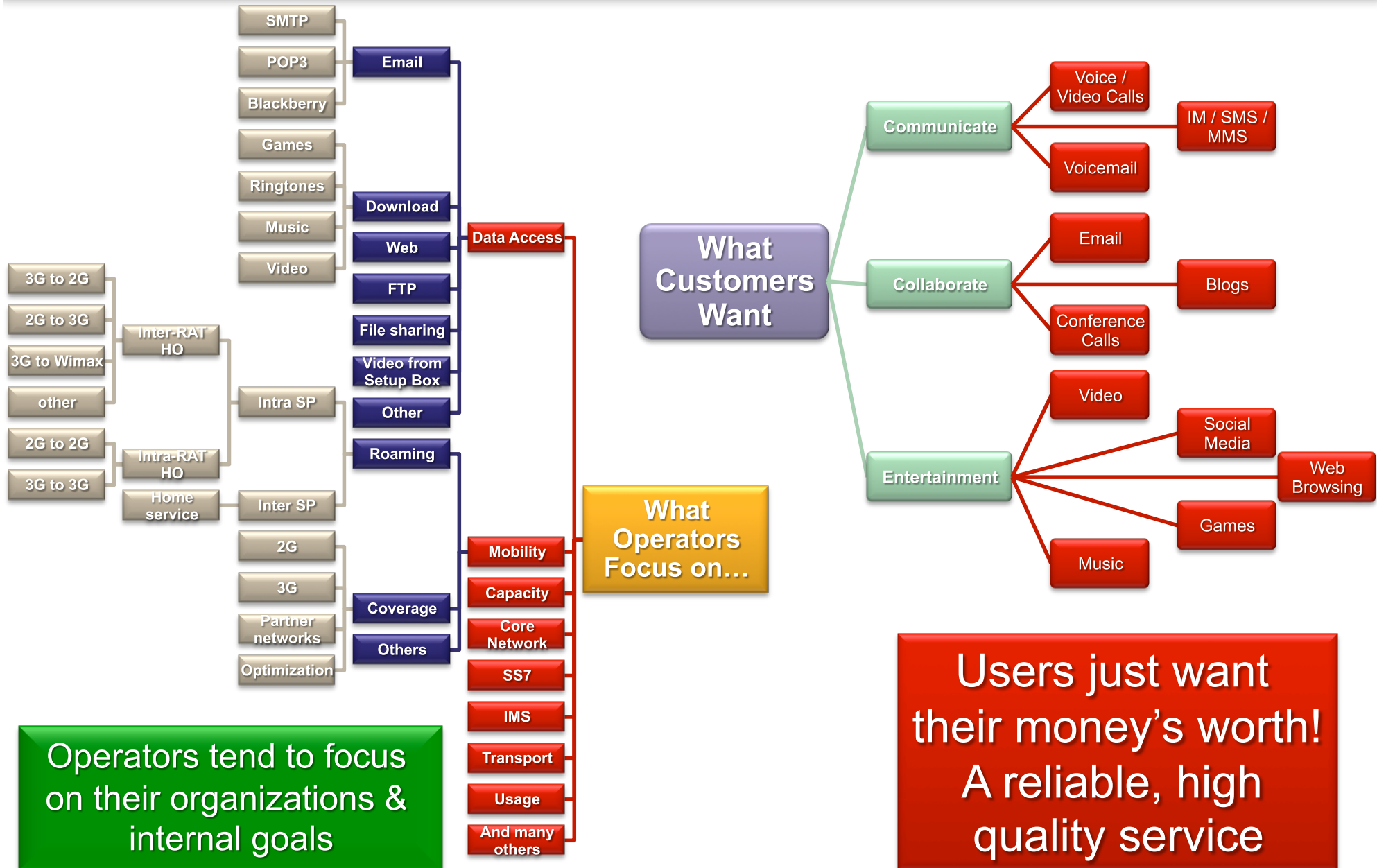
# **The 21<sup>st</sup> Century – The New Age of Customer Service Experience Management**

**“The customer experience is at the center of all my  
operational work...”**

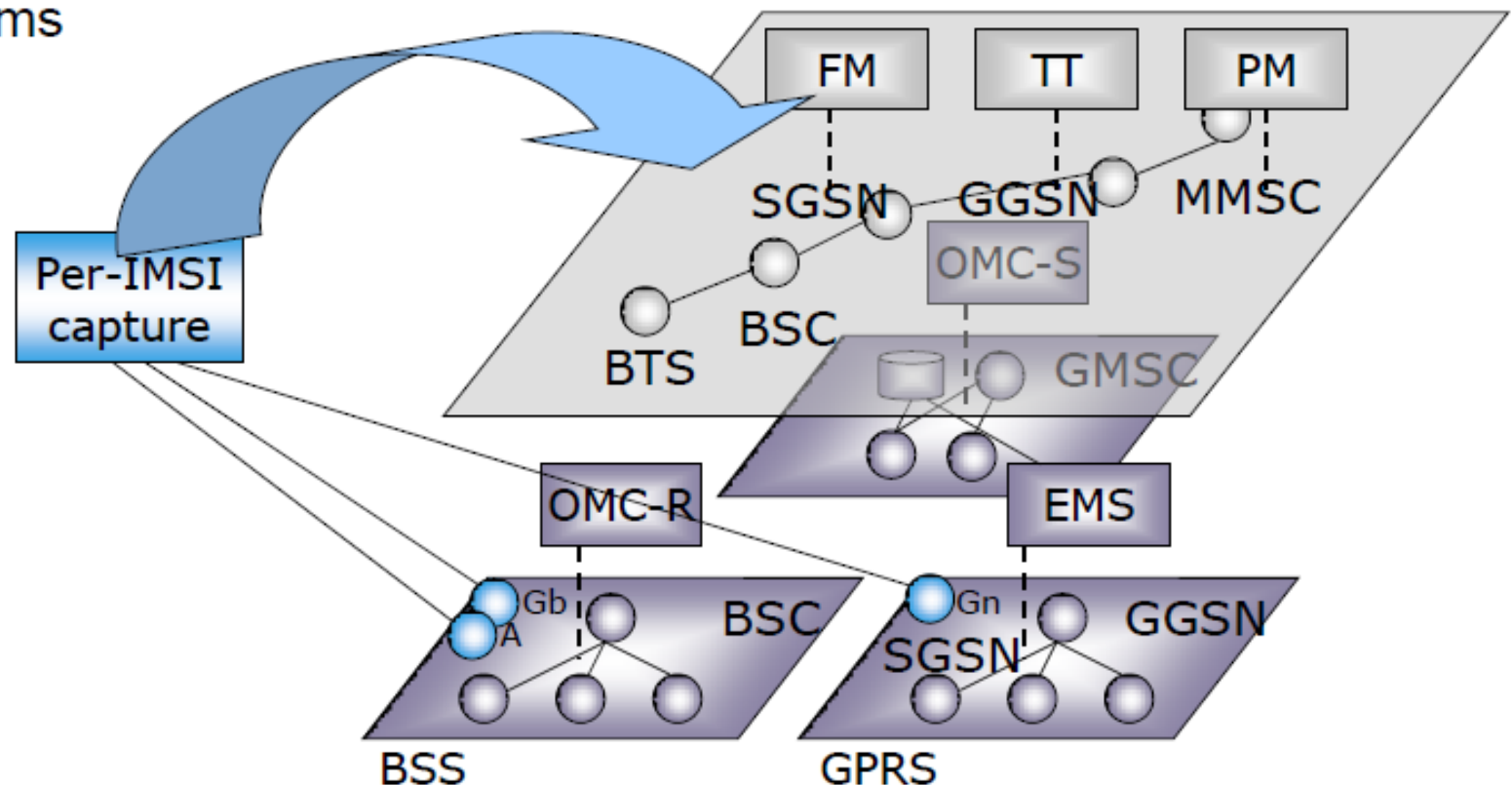
- A mechanism in which:
  1. User experience is constantly collected while the customer is using services on the network
  2. The collected information is used to understand the user, the applications and the service behavior at all times
  3. The collected information is aggregated and reported by individual customers and/or customer groups
  4. The information fed to organizations across the network operator for focused and relevant corrective action
- In this model, the user experience is at the center of all operations, engineering and customer care processes



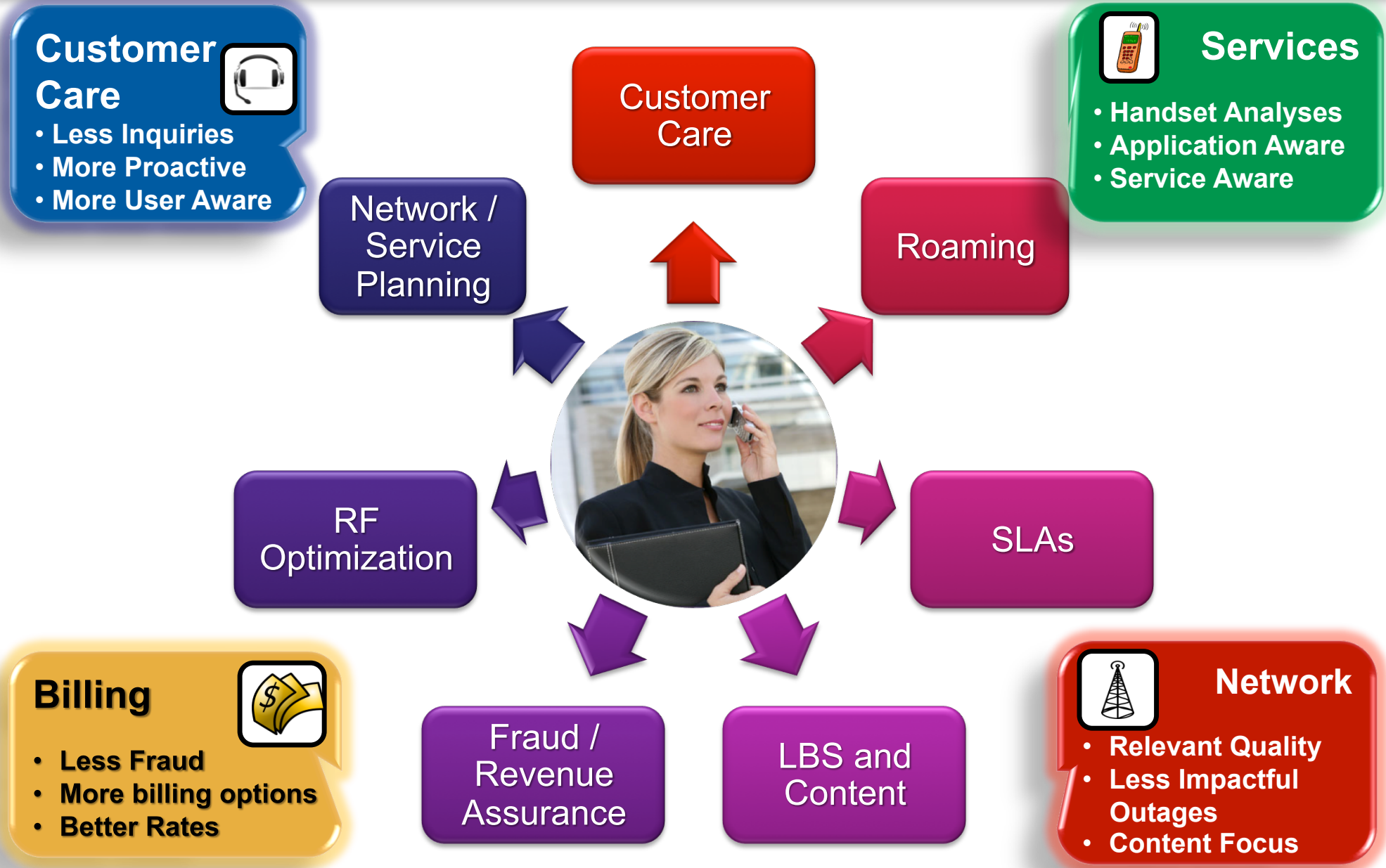
# Customer Management – Customer & Service Centric



- Measure the customers' experience independently of the network elements
- Tag customer experience with network data to allow reference to other OSS
- Maintain low-level error codes to allow effective diagnosis of problems

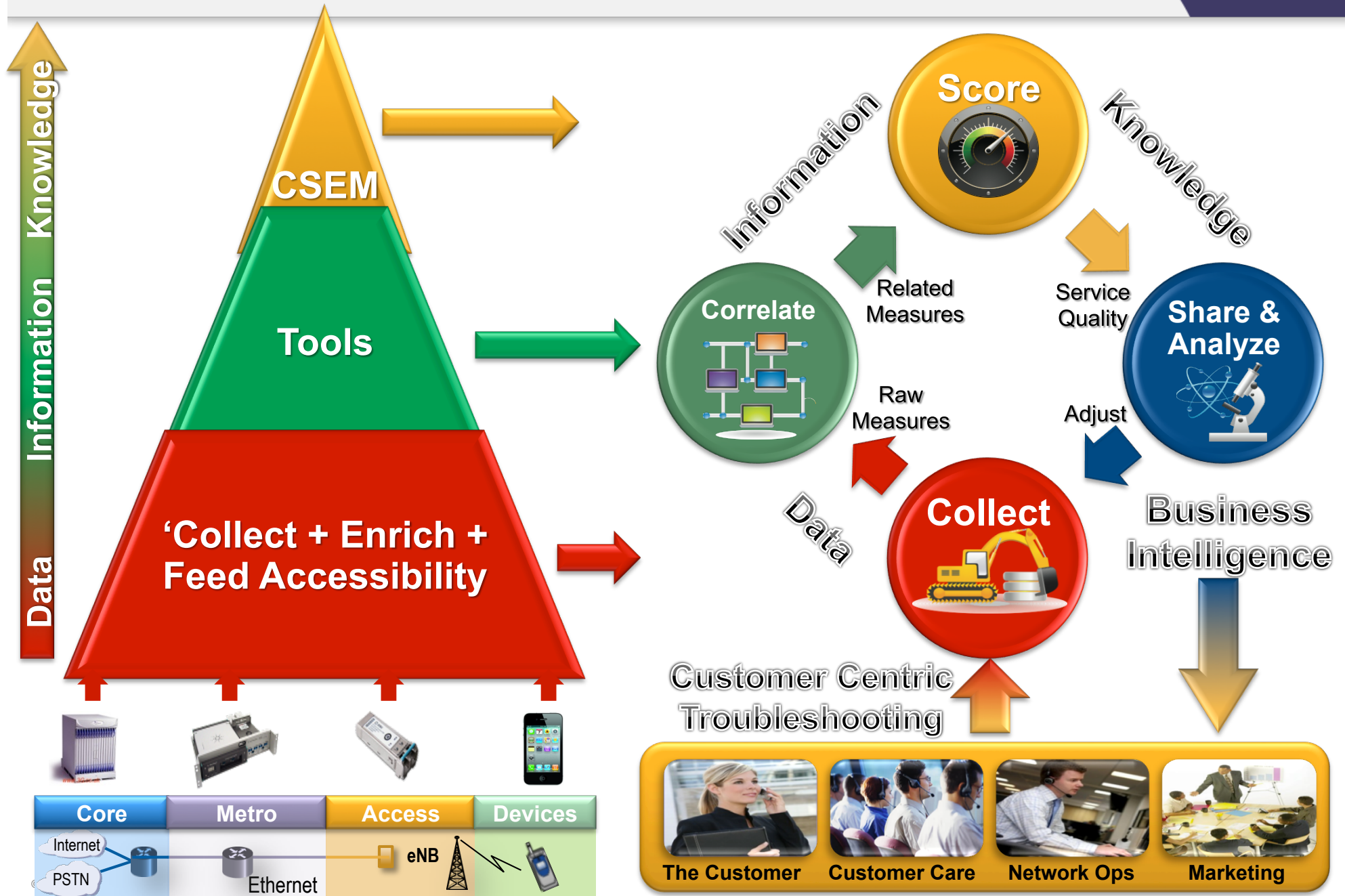


# Customer Mgmt – Operators Benefit from User Focus





# Customer Management – End to End Process

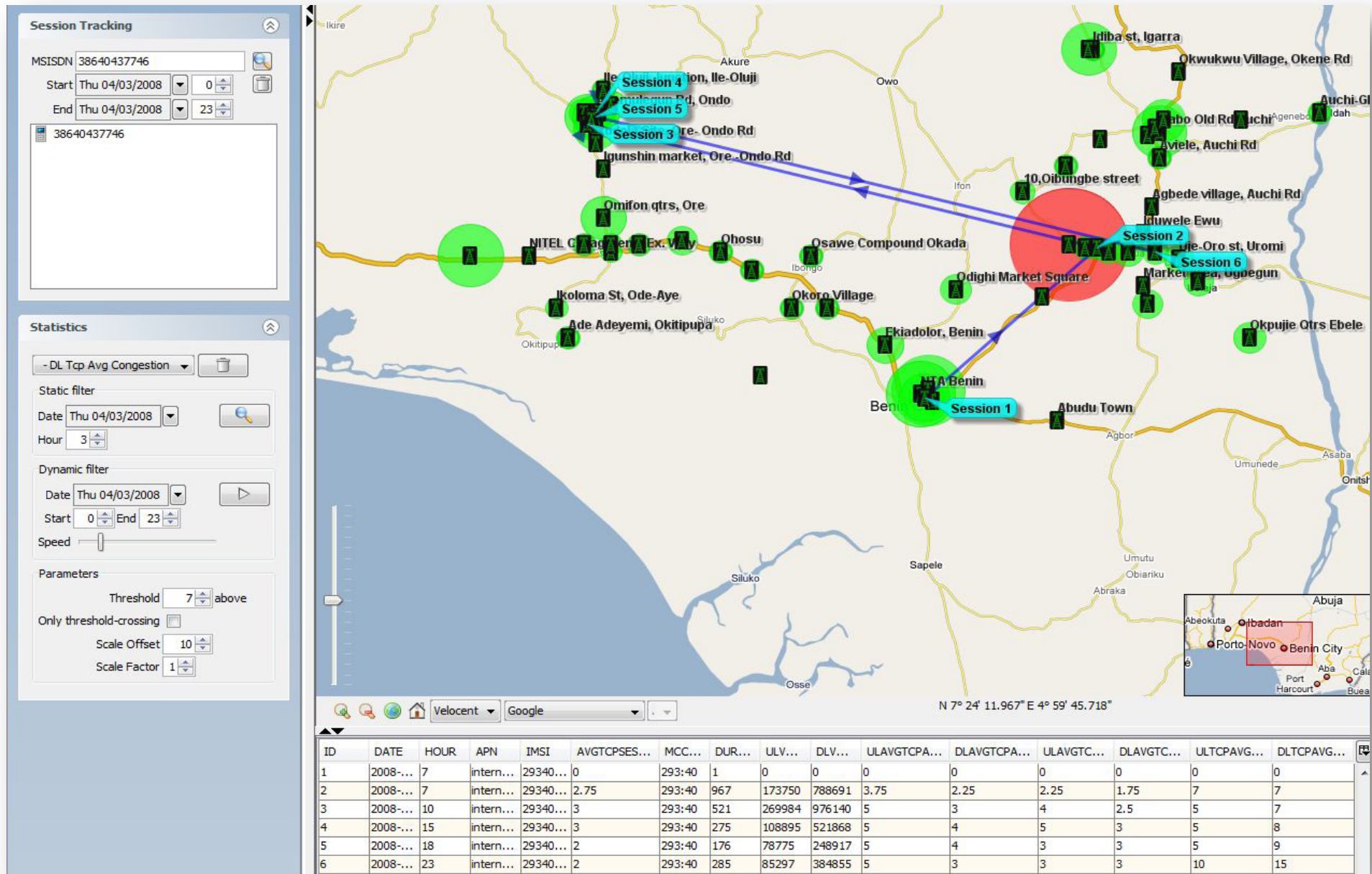


The process is comprised of five main elements:

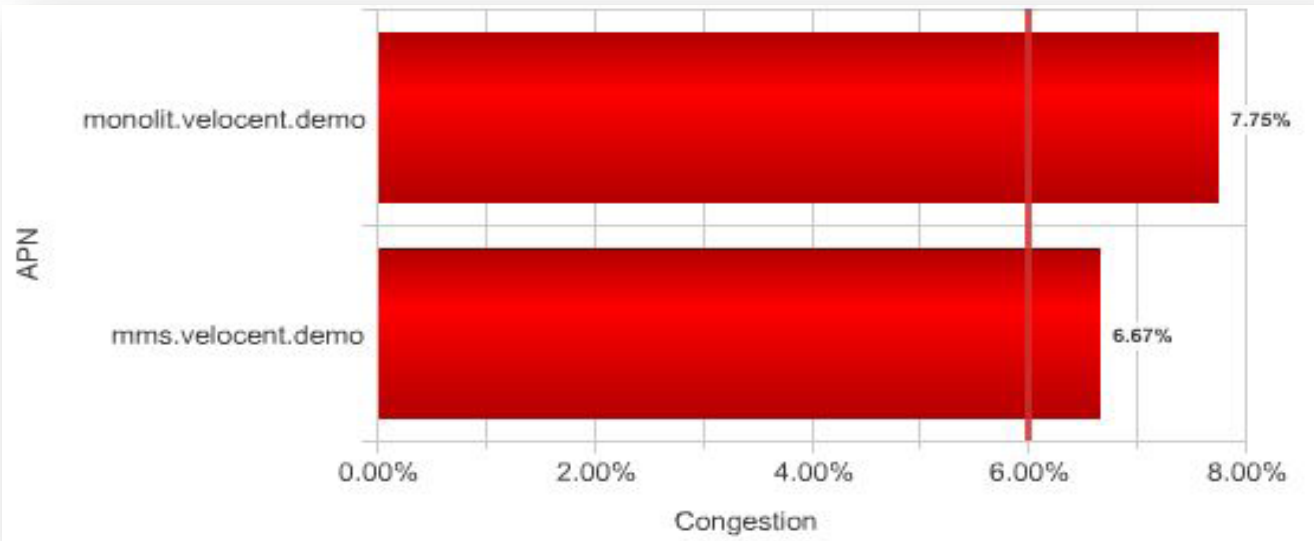
- Where is the impact?
- Who is impacted when?
- Proactive customer retention
- VIP management and SLAs
- Network awareness via customer focus

**We must focus on and minimize Customer and Service Impacting Issues**

# Customer Management – Where is the Impact?



# Customer Management – Who is Impacted?



Which APN problem should engineering be working on first?

## Affected Sessions

APN	Affected Session Count
mms.velocent.demo	1100
monolit.velocent.demo	304

## Estimated Revenue Loss

APN	Revenue Loss
mms.velocent.demo	\$330.00
monolit.velocent.demo	\$91.20

## Affected Customers

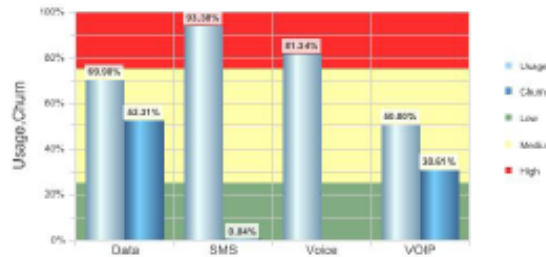
APN	Affected Customers
mms.velocent.demo	615
monolit.velocent.demo	77

The one that impacts the most customers, and has the highest Revenue Loss

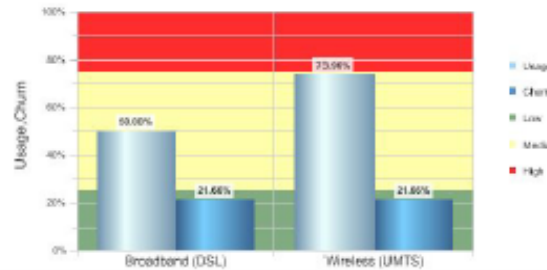
# Customer Management – Proactive Churn ID



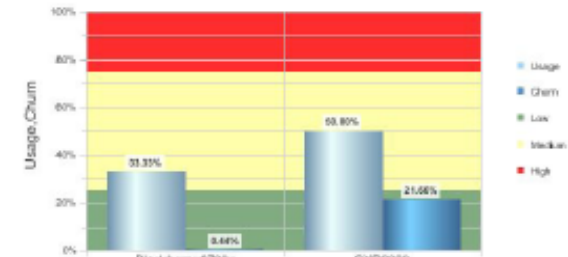
Usage and Churn by Service



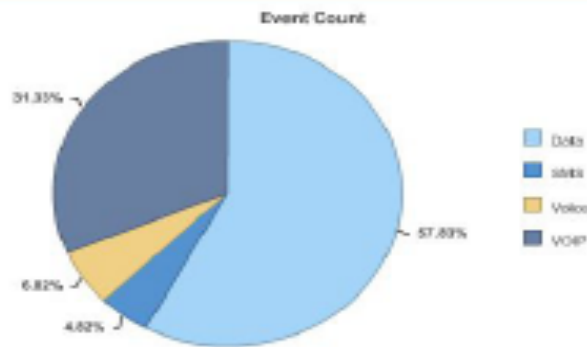
Usage and Churn by Access Type



Usage and Churn by Access Device

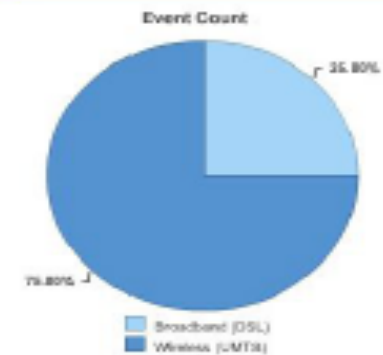


Usage by Service



Usage by Access Type

Usage Breakdown



## Customer - Service Advice

Service Type	Advice
Data	Customer is experiencing data quality issues. Confirm and offer a churn prevention recommendation as needed.

## Churn Prevention Recommendations

Recommendation	Implement Recommendation
1 Month Free Data	<input type="button" value="Implement"/>
SIP Phone Upgrade	<input type="button" value="Implement"/>

Churn Prevention Recommendations

# Customer Management – VIP Management



## Example of a Real VIP Dashboard

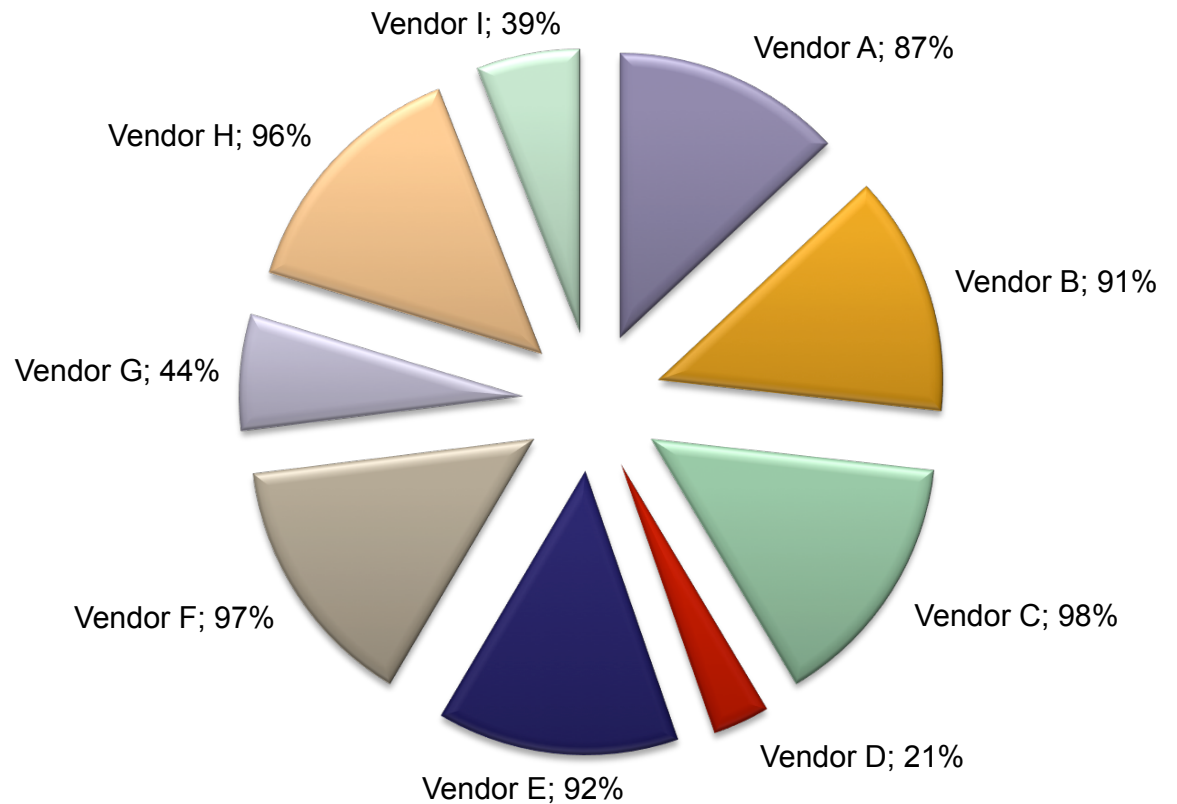
UPA Date	20120123													
Domain	CS													
	Info 1	Info 2	Info 3									Claro Total	Other Roamers	Grand Total
	Operator													
	VIP 1	VIP 2	VIP 3	VIP 4	noname			noname Total						
Data														
SMS MO Success Rate	100.00 %	56.52 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	88.37 %	77.07 %	77.08 %			
SMS MT Success Rate	100.00 %	100.00 %	100.00 %	98.08 %	100.00 %	100.00 %	100.00 %	100.00 %	99.61 %	97.60 %	97.60 %			
CS MOC Call Setup Rate	95.24 %	100.00 %	84.38 %	93.33 %	91.89 %	100.00 %	100.00 %	94.23 %	92.76 %	94.12 %	94.12 %			
CS MTC Call Setup Rate	100.00 %	100.00 %	100.00 %	100.00 %	88.89 %	100.00 %	100.00 %	94.87 %	97.94 %	97.25 %	97.25 %			
CS MOC Call Failure Completion Rate	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.56 %	0.56 %			
CS MTC Call Failure Completion Rate	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.59 %	0.59 %			
Mean CS MOC Setup Time	4.97	7.71	6.35	4.91	6.18	5.38	5.18	5.83	5.80	6.19	6.19			
Mean CS MTC Setup Time	1.79	1.55	1.72	1.80	1.46	1.28	1.22	1.34	1.59	1.47	1.47			
Measures_Max CS MOC Setup Time	14.15	15.79	11.41	10.25	16.07	7.95	7.65	16.07	16.07	228.36	228.36			
Measures_Max CS MTC Setup Time	3	2.02	4.8	3.12	2	1.7	1.52	2	4.8	29.2	29.2			
Measures_Volume	142	49	95	108	134	50	20	204	598	2461144	2461742			
Measures_Volume of CS MOC Successful Call Attempts	40	11	27	14	34	9	6	49	141	269863	270004			
Measures_Volume of CS MOC Unsuccessful Call Attempts	2	0	5	1	3	0	0	3	11	16854	16865			
Measures_Volume of CS MOC Successfully Terminated Call	24	7	21	8	18	8	5	31	91	169288	169379			
Measures_Volume of CS MTC Successful Call Attempts	27	4	18	9	16	12	9	37	95	215660	215755			
Measures_Volume of CS MTC Unsuccessful Call Attempts	0	0	0	0	2	0	0	2	2	6088	6090			
Measures_Volume of CS MTC Successfully Terminated Call	21	4	10	6	13	4	7	24	65	120560	120625			
Measures_Volume of CSMOC Intentionally Terminated Calls	0	0	0	0	0	0	0	0	0	950	950			
Measures_Volume of CSMTC Intentionally Terminated Calls	0	0	0	0	0	0	0	0	0	716	716			
Measures_Volume of Dropped Calls	0	0	0	1	1	0	0	1	2	16038	16040			

Clients who are experiencing poor QoS must be identified and contacted

## Top 10 Handsets - Sorted by Volume of SMS

Device	Volume of SMS	SMS Submit Success Rate	SMS Delivery Success Rate
	<b>725077</b>	<b>78%</b>	<b>98%</b>
Vendor A	204287	<b>87%</b>	99%
Vendor B	172816	91%	99%
Vendor C	118857	98%	100%
Vendor D	66501	<b>21%</b>	96%
Vendor E	63470	92%	97%
Vendor F	43507	97%	91%
Vendor G	35543	<b>44%</b>	71%
Vendor H	12542	96%	100%
Vendor I	7554	<b>39%</b>	87%

### SMS Submit Success Rate



**Why is engineering working on problems that cannot be improved via network improvements or optimization?**

## **Conclusions**

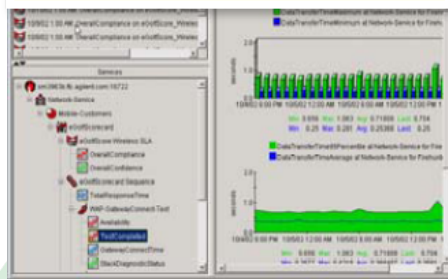


- Consumers today have different loyalty criteria
- The increase, complexity and unpredictability of network traffic today calls for new methodologies and solutions
- Customers need to be at the center of all efforts for the operator
- Organizations and processes must change in order to focus on the end customer
- **This is not some crazy marketing dream... it is real... and JDSU has the experience and solutions that prove this possible today**

# Conclusion – JDSU is a True E2E Solution Provider



## JDSU KPIs & Alarms



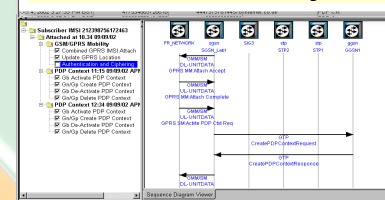
## 1. What's going on?

- JDSU Core Monitoring – Alarms and KPIs
- Trouble Tickets

## 2. First Level Drill Down

- Core vs Access
- Service vs Network

## JDSU Session Analysis

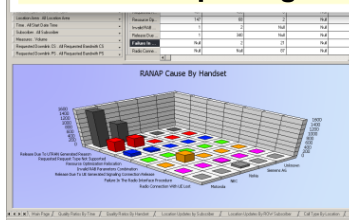


## 6. Continuous Analysis

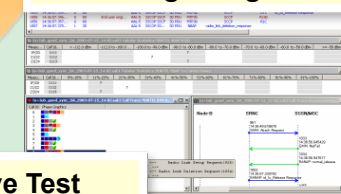
- Is this happening elsewhere?
- Handset Analysis
- VIP Grouping

# Customer Centric Process

## JDSU Reporting



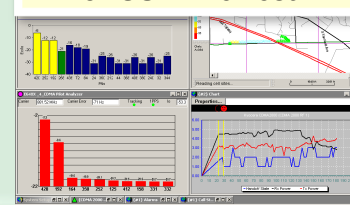
## JDSU Signaling Test



## 3. Root Cause

- Core Details
- Access Details
- Service Details

## JDSU Drive Test



## 4. Root Cause

- Radio Details

## 5. Fix the problem!



**Thank You for Your Attention**