

# Keeping Customers Front of Mind

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**SPARK IS HERE**



# Spark Re-engineered IT Stack



New Online Customer Environment & Apps



Call Centre



Spark Stores

**FROM:**

Silo based product design and complex IT stack

Customer interaction	Telecom defined
Product / Process	Multiple, overlapping
Application	100s
Integration / Data	Many layers, poor data

**TO:**

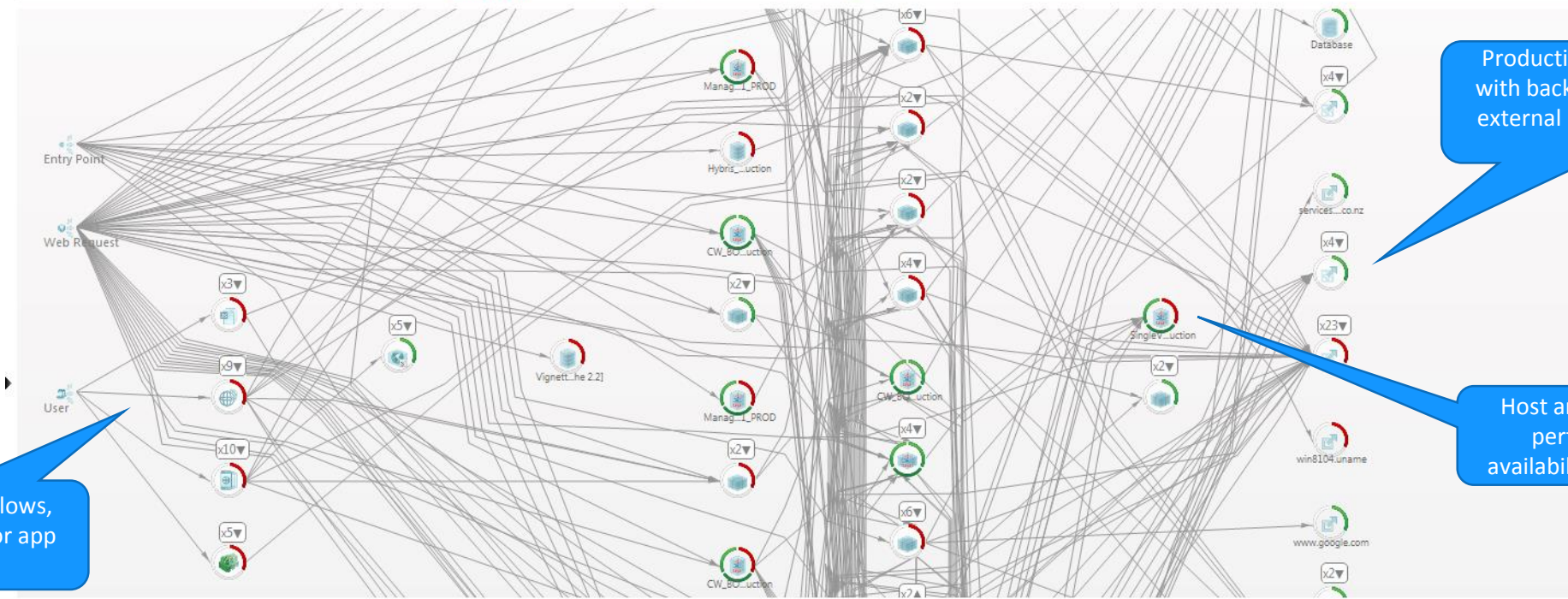
An improved customer experience, at a cost we can afford.

Customer defined
Simple portfolio / automated process
Consolidated core apps
Single integration stack, quality data



# Re-engineering Topology View

System Monitoring - dynaTrace Client  
Dashboard Edit Tools Settings Help  
Monitoring  
unx8314...m.co.nz - ReEng R1 PROD Host List ora8181  
Configure  
Total Transactions : 370,742 (10592.63 per minute) | Failed Transactions : 6,696 (1.81 %) | Inter Tier Time Per Transaction: 6.96ms (1.1%) (show)



E2E transaction flows, immediate host or app problems

Production Re-eng stack – with backend DB and other external non instrumented apps

Host and application performance / availability information

<b>3716</b> Active Visits 0 % mobile	<b>23</b> Applications 9697 requests/minute	<b>112</b> Processes	<b>126</b> Hosts
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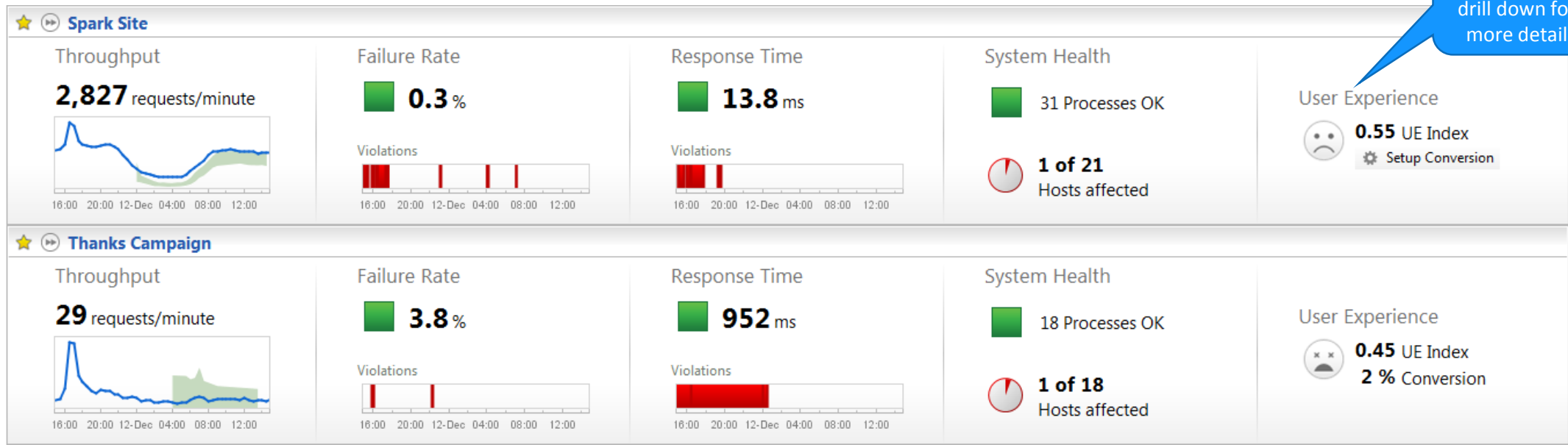
<b>End User Experience</b> Analyze performance by geolocation, client types and operating system.	<b>Mobile Applications</b> Inspect mobile visits, analyze performance hotspots, errors and crashes.	<b>Web Request Performance</b> Diagnose database, methods, errors, exceptions and response time hotspots.
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unx8314.telecom.co.nz unx8318.telecom.co.nz 1

# The Application Monitoring Overview

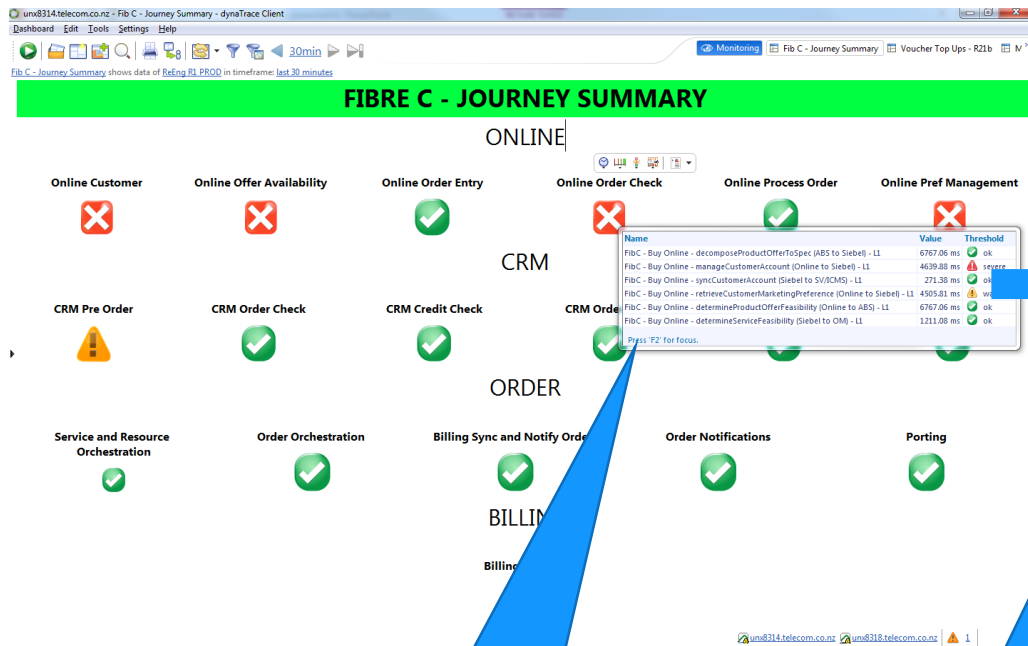
- Monitoring operational heartbeat / overview showing Applications, user experience and conversion
- In operations centre a good view to show unusual patterns of behaviour that could indicate new or unknown faults

Key measures summarised – drill down for more detail



# The Application Monitoring Overview

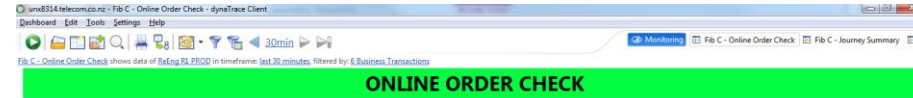
- Tier 1 Operations team views – immediate indication of journey issues, drill down to details as required



Easy to view via RAG status, mouse over reveals sub transactions impacting Online Order Checking

Drill down to failing operations relating to online order checking

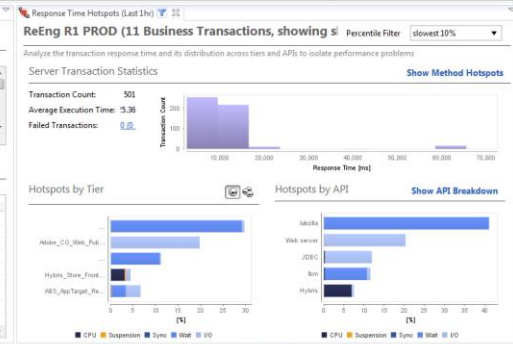
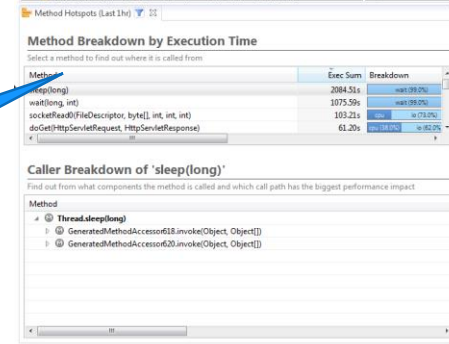
Detailed diagnostics – method hotspots, business transaction count, incidents / violations, complete time, purepaths...



Plotting percentiles, breaches



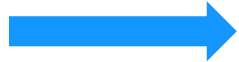
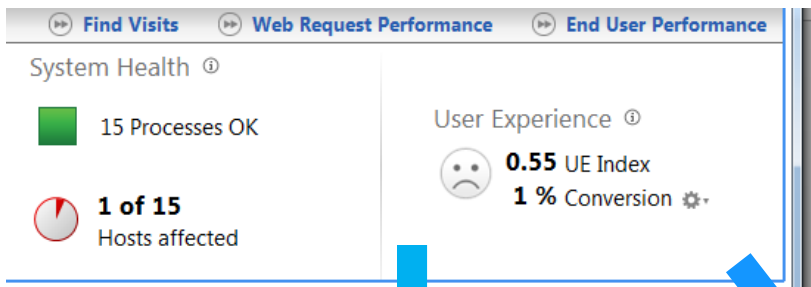
Name	Count	Count per day	Incidents	Incidents per day	Violations	Violations per day	Failed %	Compare to base line
FibC - Online Offer Avail - determineServiceAvailability (Siebel to ABS) - L1	136	6528.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - determineOrderFeasibility (ABS to SL H41) - L1	136	6624.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - translateAddressID (OM -> ALM) - L1	136	6528.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - retrieveLocationCharacteristics (OM to SLM) - L1	135	6480.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - translateProductSpecToOffer (ABS to Siebel) - L1	136	6528.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - manageResource (OM to Granite Resource Inventory) - L1	0	0.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - retrieveLocation (Online to SLM) - L1	131	6288.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - determineProductOfferAvailability (Online to ABS) - L1	136	6528.00	0	0.00	0	0.00	0%	0%
FibC - Online Offer Avail - retrieveCustomerLocation (Online to ICMS) - L1	36	1728.00	0	0.00	0	0.00	0%	0%



# Drilldown to Per Application Views & User Experience

- Drilldown from here to view application specific views of visits, user experience, application process (such a jvm health)

Summary of activity on UEM and Web site performance



Web requests, page load, response and failures...

Visits and actions with UEM rating

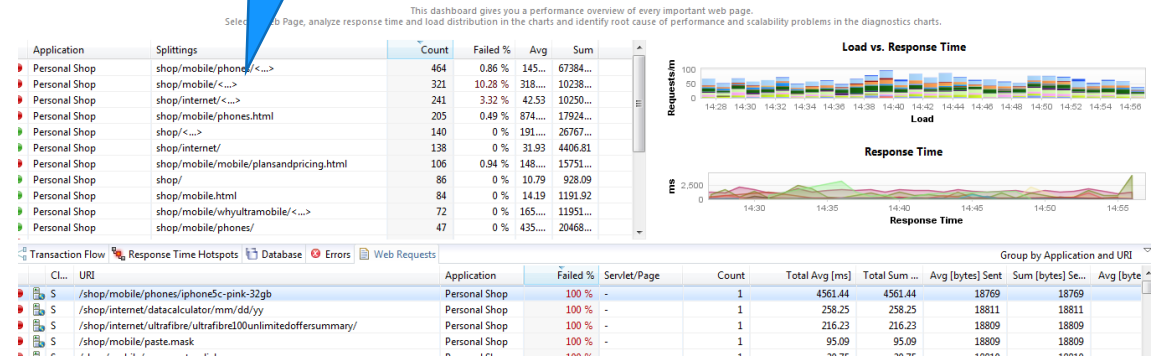
**Visits (no grouping)**  
Selecting a single visit shows a detailed view of its user actions. Grouped visits display average values.

Visit	User Experience	User Actions	Application	Client Family
Visit from Mountain View, California, United Sta	satisfied	657	Personal Shop	Googlebot/2.1
Visit from Mountain View, California, United Sta	satisfied	522	Personal Shop	Googlebot/2.1
Visit from Auckland, Auckland, New Zealand usi	frustrated	15	Personal Shop	Mobile Safari 6.0
Visit from Shenyang, Liaoning, China using Fiel	frustrated	4	Personal Shop	Firefox 32.0
Visit from Levin, Wellington, New Zealand usin	frustrated	29	Personal Shop	Chrome 39.0
Visit from Christchurch, Canterbury, New Zealar	satisfied	5	Personal Shop	Chrome 39.0
Visit from Auckland, Auckland, New Zealand usi	frustrated	13	Personal Shop	Chrome 39.0
Visit from Auckland, Auckland, New Zealand usi	satisfied	7	Personal Shop	Chrome 39.0
Visit from Auckland, Auckland, New Zealand usi	tolerating	14	Personal Shop	Chrome 38.0
Visit from Christchurch, Canterbury, New Zealar	frustrated	1	Personal Shop	Mobile Safari 8.0
Visit from Timaru, Marlborough, New Zealand u	frustrated	17	Personal Shop	Firefox 33.0
Visit from Palmerston North, Wellington, New Z	frustrated	3	Personal Shop	Chrome 32.0
Visit from Christchurch, Canterbury, New Zealar	satisfied	8	Personal Shop	Mobile Safari 7.0
Visit from Auckland, Auckland, New Zealand usi	frustrated	14	Personal Shop	Android browser 4.0

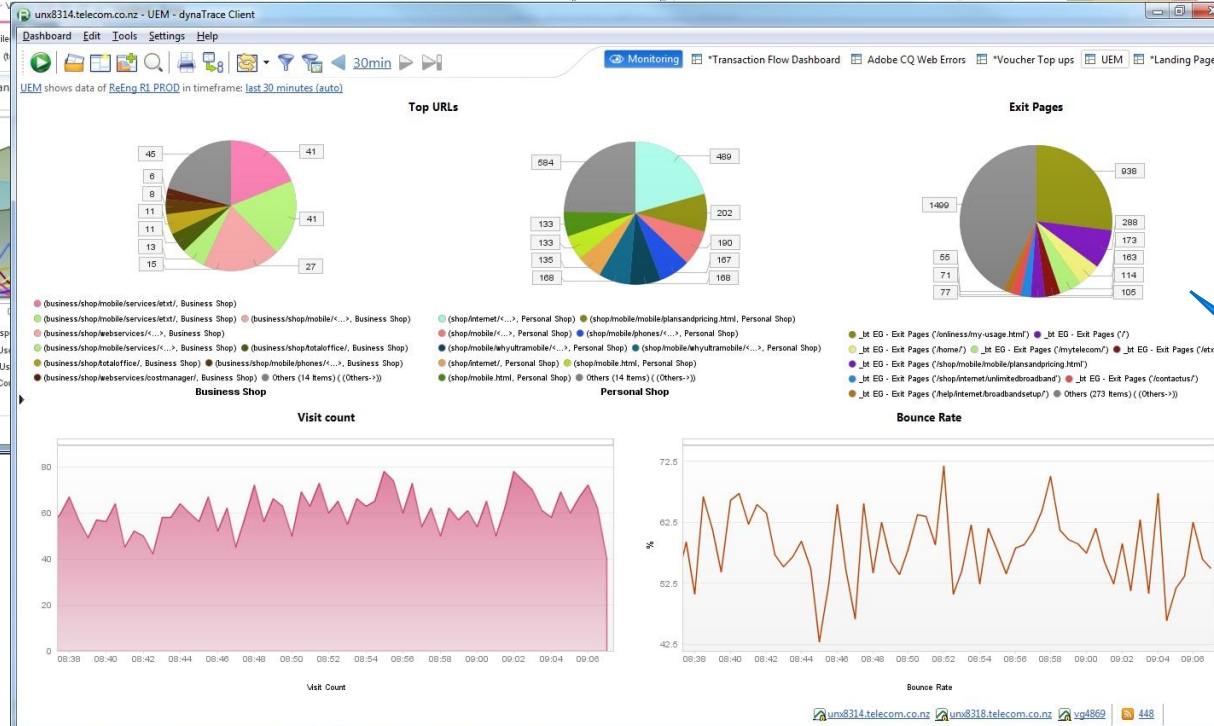
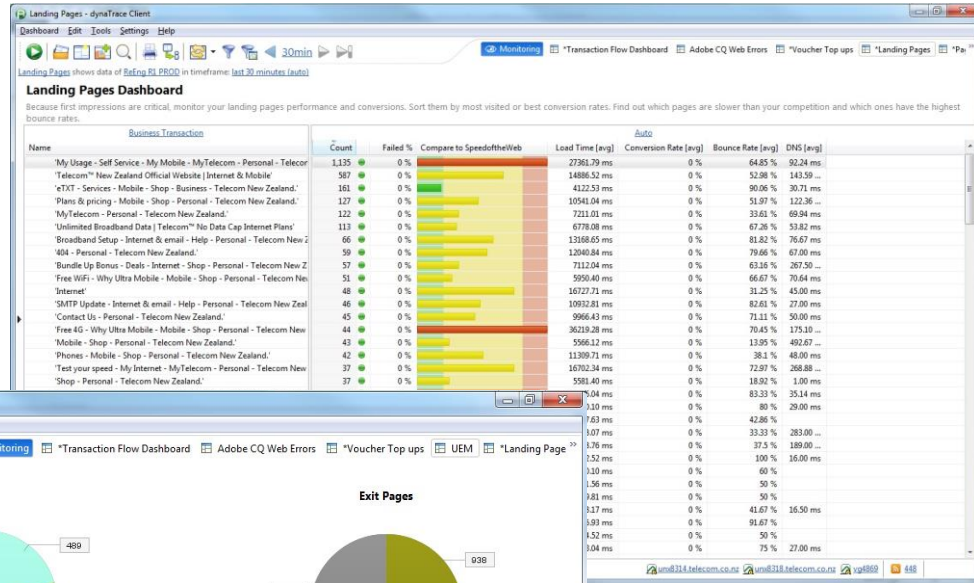
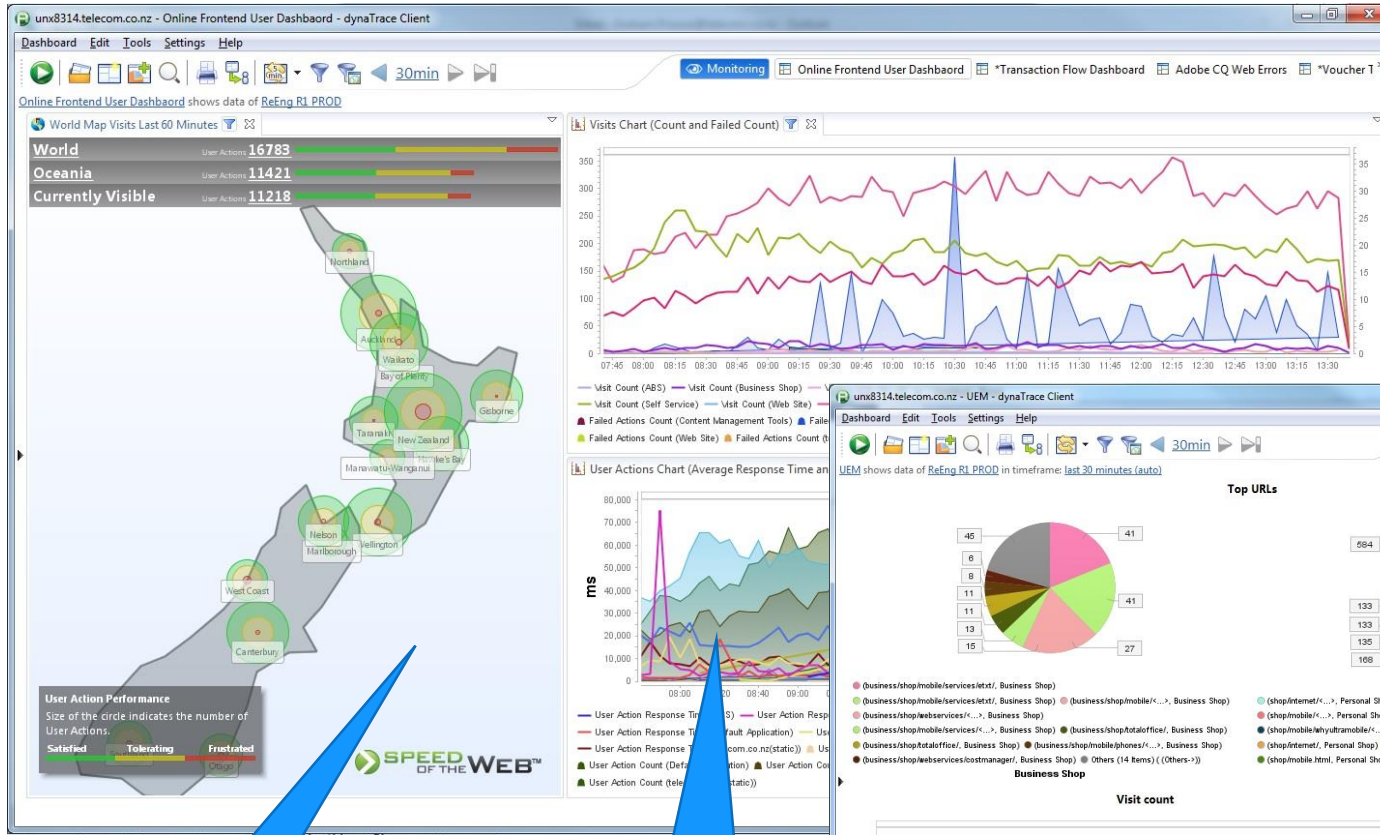
  

User Action	Response Ti...	Server Contribution [ms]	Network Cont
Loading of Page /shop/mobile/mobile/plansandpricing/	19869.00	357.43	
click on "Phones" on /shop/mobile/mobile/plansandpricing/	23893.00	12875.26	
click on "Phones" on /shop/mobile/mobile/plansandpricing/	307.00	-	
click on "\$ 329UP FRONT" on /shop/mobile/phones.html	26275.00	2344.90	
click on "\$ 329UP FRONT" on /shop/mobile/phones.html	455.00	-	
click on "iPhone 5s 32GB Gold - Phones - Mobile - Shop - Personal - Spa...	18295.00	2393.11	
click on "iPhone 5s 32GB Gold - Phones - Mobile - Shop - Personal - Spa...	264.00	-	
click on "Phone" on /shop/mobile/phones/iphone-5s-16gb-natl0.html	25382.00	10762.77	

## Web Request Performance Analysis



# Online and UEM Views



N.Z. User Experience map

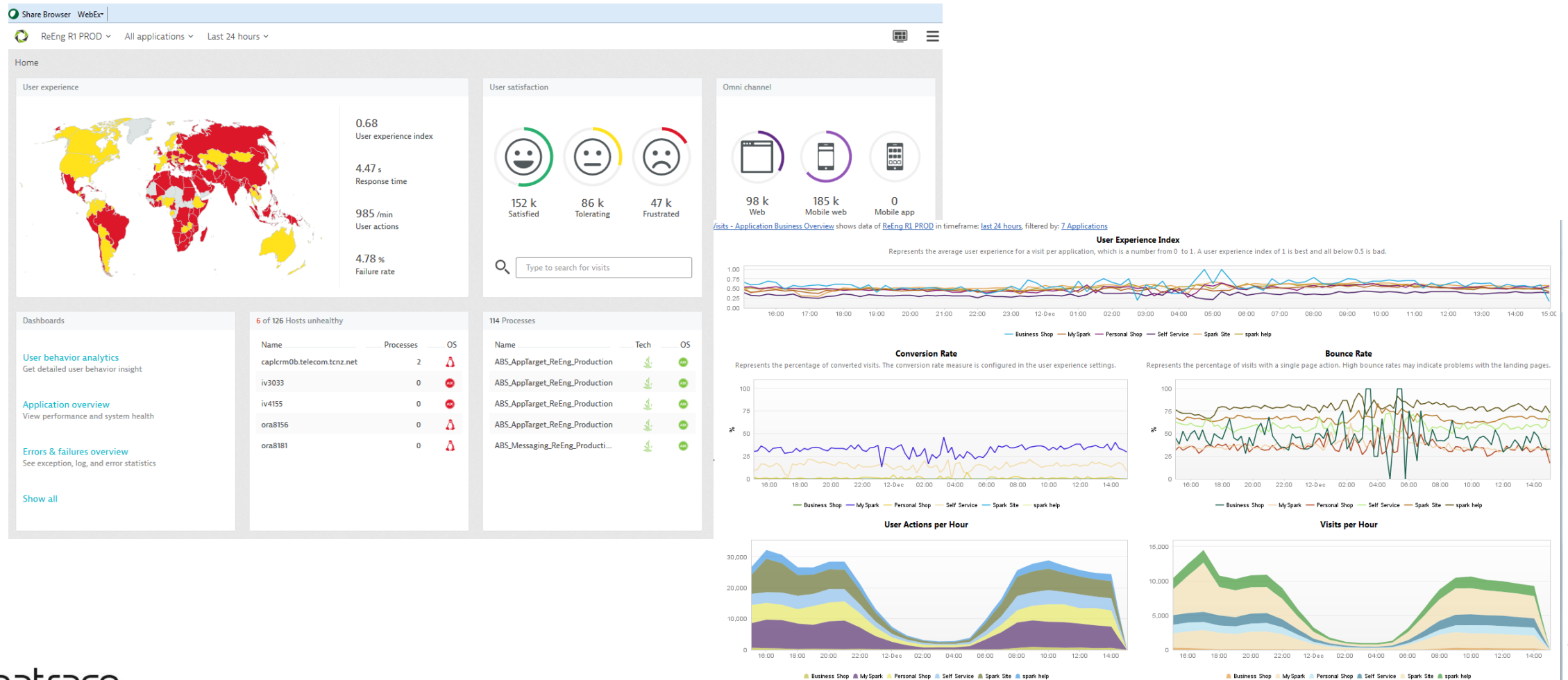
Visits and failures with response time – spot trends and patterns, problem hotspots

Visit count, bounce, top links...



# The Web Application Business Overview

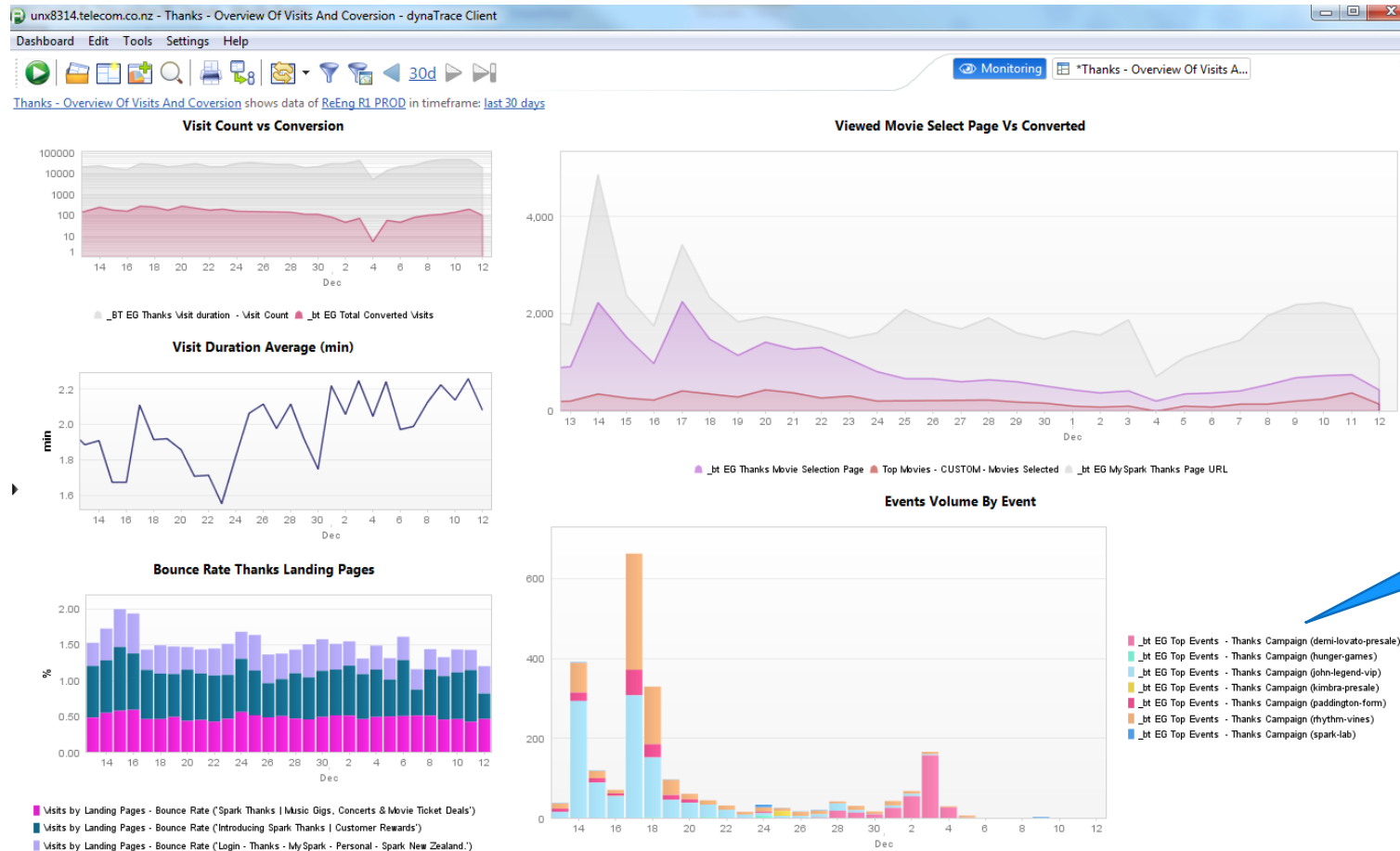
- Focus on high level user experience, bounce, conversion - can be filtered per “application” – useful to spot trends / patterns and immediate issues



# Focusing On One Application – Thanks Campaign

- We've instrumented measures and transactions to show performance in real time of Spark Campaigns like 'Thanks'

Count and conversion, visit duration and bounce off key campaign pages



Up take of Events during 'Thanks' promotion

# Slowest loading or Largest URI

- Proactively identify pages that are very large or have very high load times that could impact user experiences

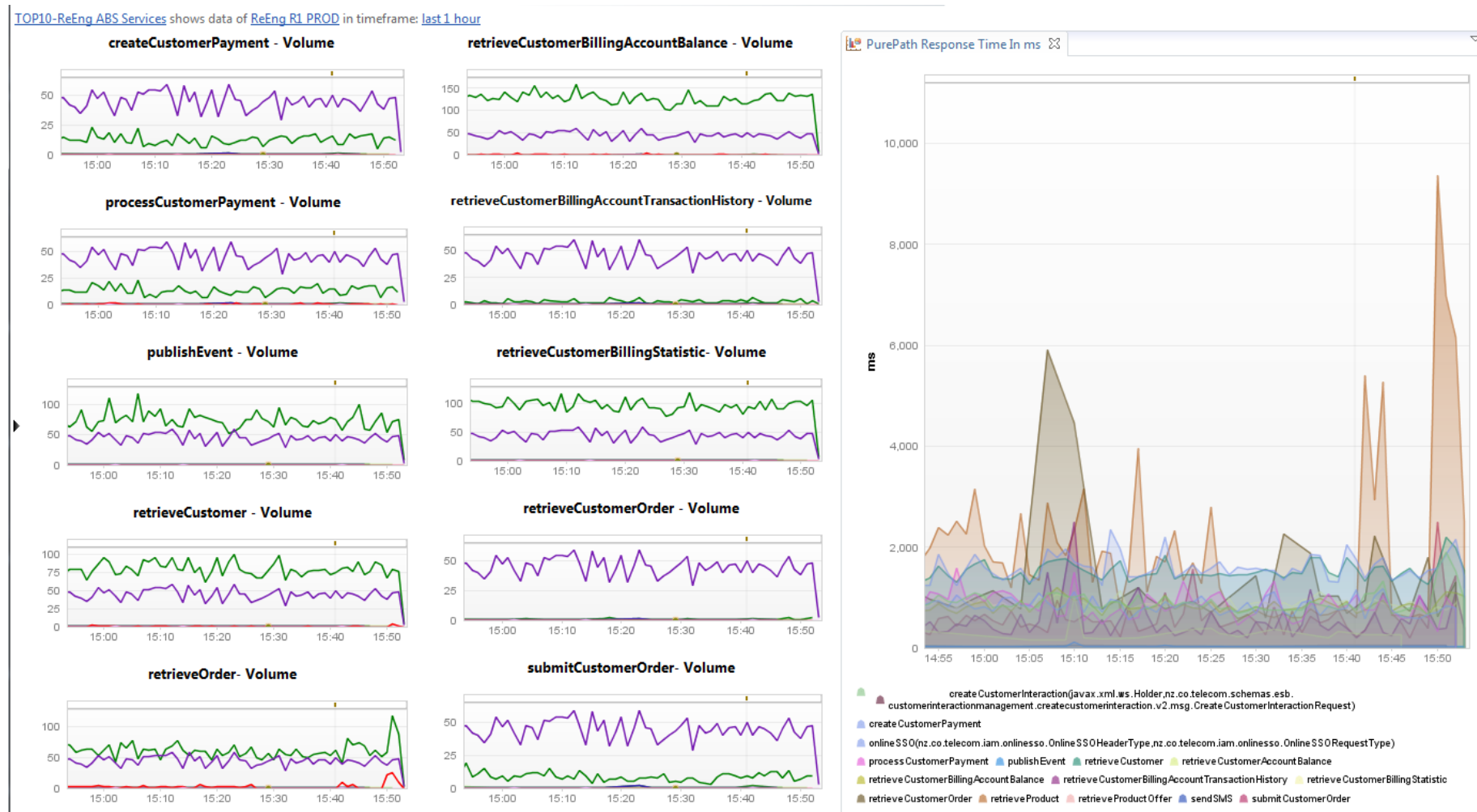
Web - Slow OR Large Web Requests By URI shows data of ReEng R1 PROD in timeframe: last 5 minutes, filtered by: 16 Agent Groups plus correlating Agents and Business Transaction ' \_bt RJ Slow or Large Web Requests'

Name	Application	Splittings	Failed %	Count	Max	Avg	Time [ms] Avg	Time [ms] Max
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/telecomcms/Hero-images/mob...	0 %	2	5998418.00	5998418.00	22774.48	25827.65
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/telecomcms/Hero-images/roa...	0 %	8	5565255.00	5393912.12	9398.27	21065.05
_bt RJ Slow or Large Web Requests	Spark Site	content/cms/sample/en/store/tnzProducts/m...	0 %	26	5220211.00	5062415.73	10284.37	46216.98
_bt RJ Slow or Large Web Requests	Spark Site	content/cms/sample/en/store/tnzBusinessPro...	0 %	3	5220211.00	5220211.00	5562.10	6880.33
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/tnz/mobile/phones/HTC/htc-de...	0 %	1	3900230.00	3900230.00	14829.02	13010.00
_bt RJ Slow or Large Web Requests	dsm.spark.co.nz	spark_dsm/services/js/city_suburb_6_35.js	0 %	1	565746.00	565746.00	4491.77	4491.77
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/telecomcms/content-images/b...	0 %	1	523771.00	523771.00	7864.90	7864.90
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/telecomcms/content-images/in...	0 %	2	426297.00	426297.00	34570.10	60021.86
_bt RJ Slow or Large Web Requests	MySpark	secure/myspark/downloadunbilledcalls/	0 %	1	143383.86	143383.86	143383.86	143383.86
_bt RJ Slow or Large Web Requests	Smart Phone API	ss/1/extras/catalogue	87.5 %	8	67774.00	9070.00	22017.33	30358.91
_bt RJ Slow or Large Web Requests	Spark Site	broadbandsetup	0 %	1	60060.36	60060.36	60060.36	60060.36
_bt RJ Slow or Large Web Requests	spark help	help/broadbandsetup	100 %	1	60059.23	60059.23	60059.23	60059.23
_bt RJ Slow or Large Web Requests	Spark Site	content/dam/telecomcms/content-images/in...	0 %	2	60021.86	34570.10	34570.10	60021.86

Here we can see a number of very large >5MB image files. All top 5 rows have avg. client load time 5 up to 20+ seconds as a result.

# Back End – Simplified Top 10 ABS Web Services

- For significant Web Services - Avg/max volume, response time on average, with alerting



# Back End - Health Of ABS Web Services

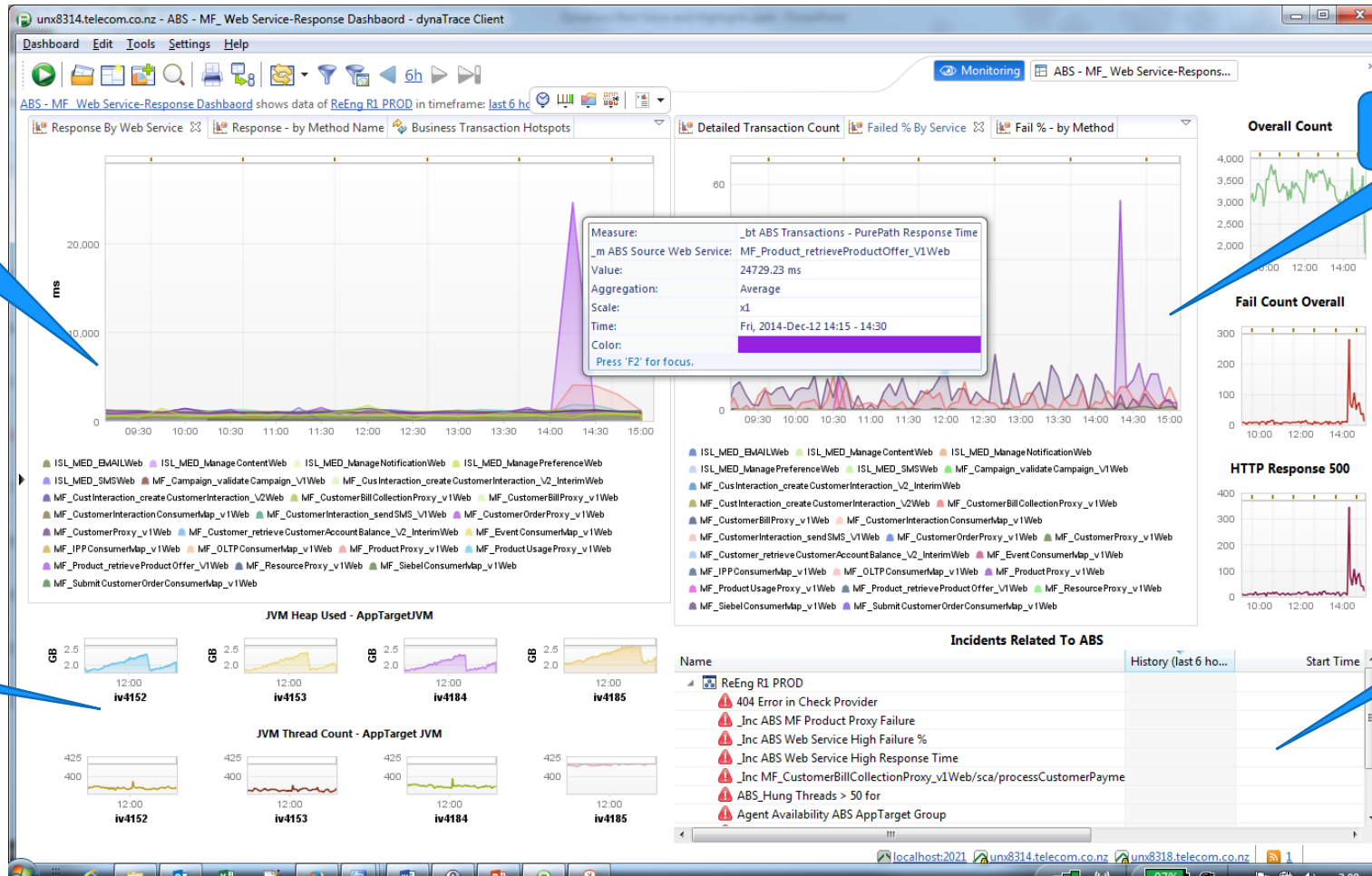
- Per web service response time and failure rates by web service or method (or focus on a specific services e.g. for our Top Up for Mobile customers)

Response time measures by service

Failure by service

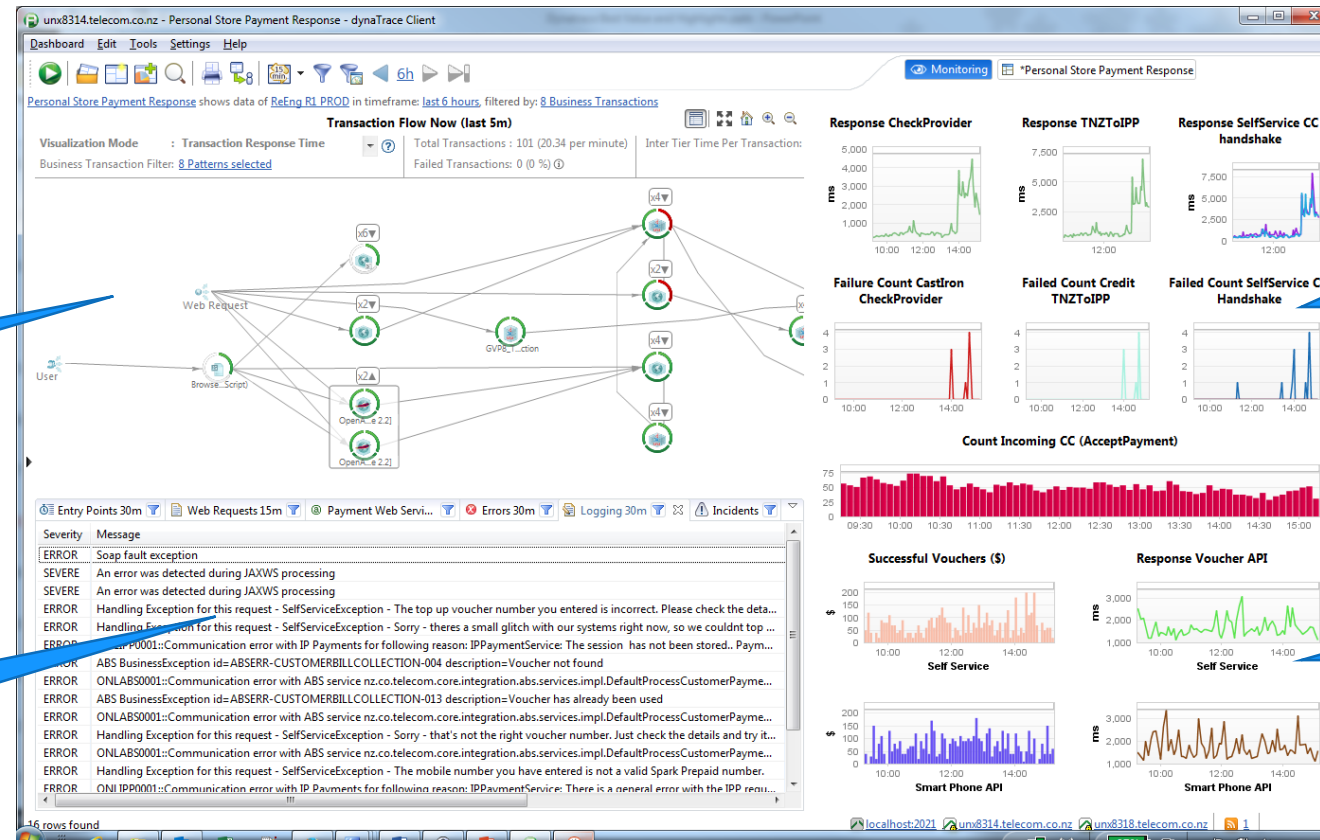
JVM issues

Alerts to Service Desks



# More Detailed View of Payments and Vouchers

- Unifies transaction view, time series and details such as incidents and logging for credit card and voucher top ups
- This view has been instrumental in early detection of IPP (billing payments) service failures (rather than waiting for flood of angry calls hours into the fault)



Topology flow view

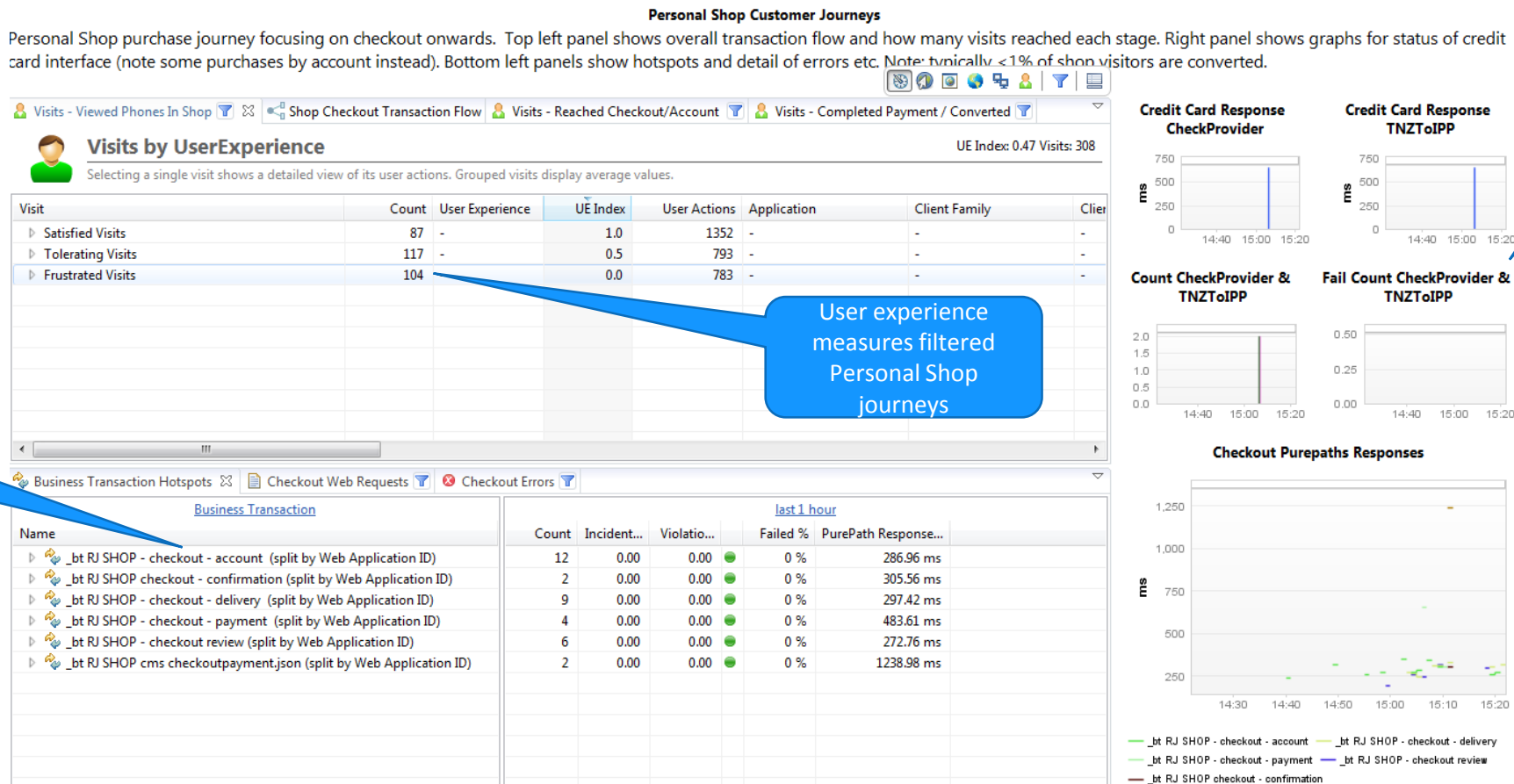
Response times for various transaction operations associated with voucher payments

Service failures associated with payments

Counts and success measures or issues with key APIs

# SHOP – Purchase Journey Overview

- How visitors are there to the online shop and what is user experience?
- How many start checkout process and how many complete it?



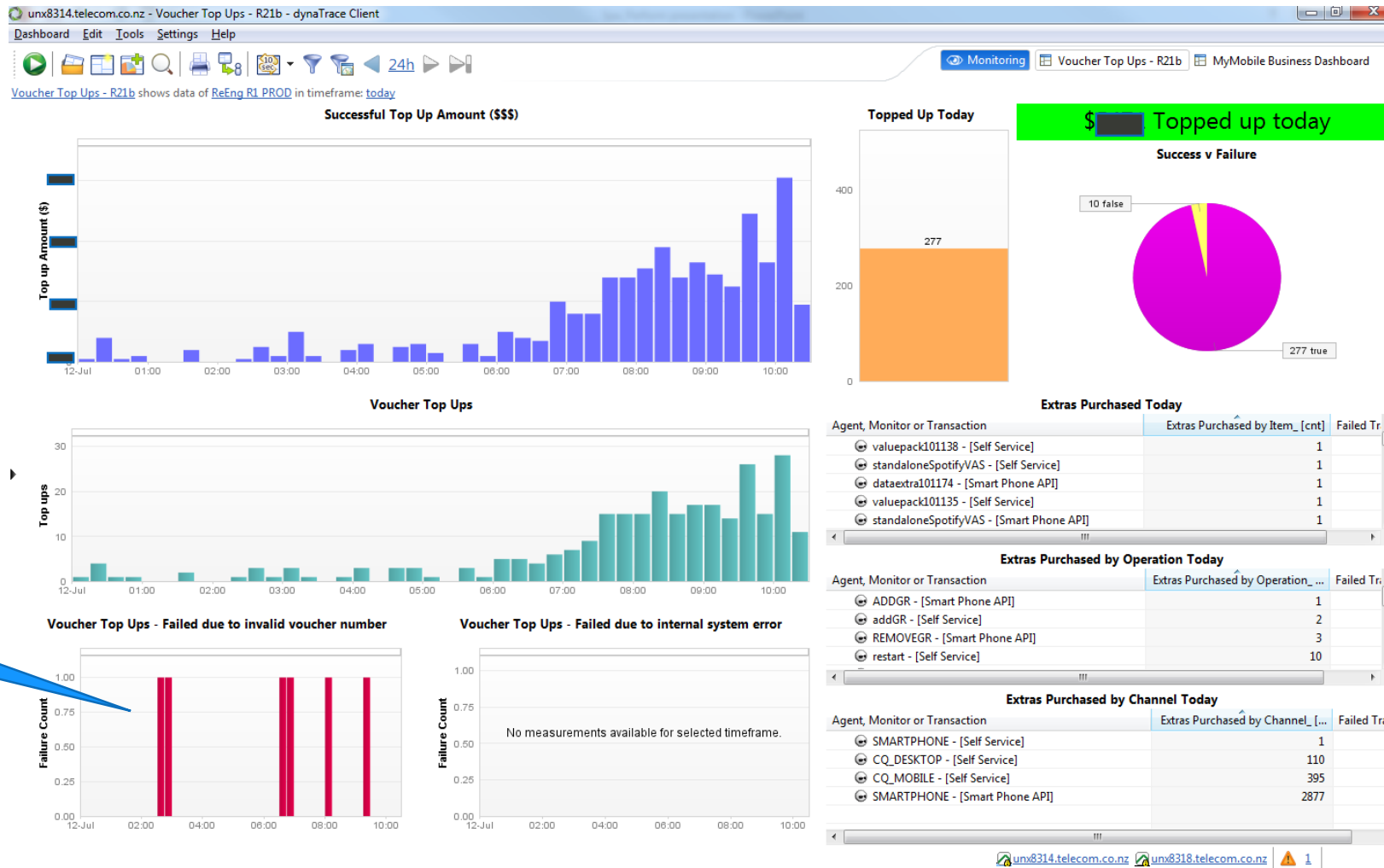
Hotspots and errors

User experience measures filtered Personal Shop journeys

Credit card issues

# Spark.co.nz – Voucher top-ups

- Shows purchases and errors with prepaid Mobile top-ups



Top-up amount

Failures due to user and system errors

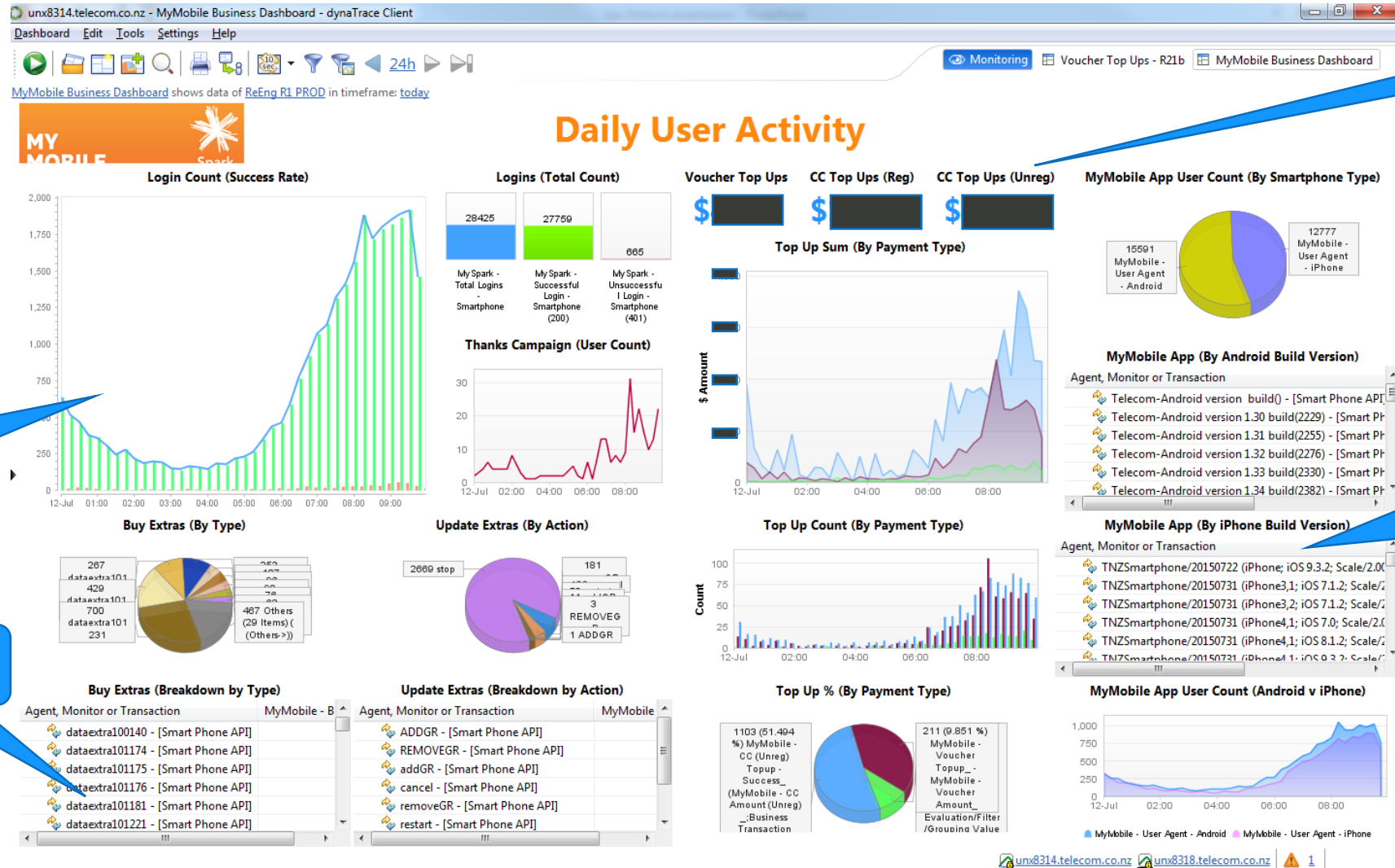
Additional purchase add-ons





# Spark Mobile App – Daily User Tracking

- Shows user activity from Mobile app – purchases (by type), volumes, login success



Login success or failure – drill down to cause of failures

What customers bought

Amount of payment

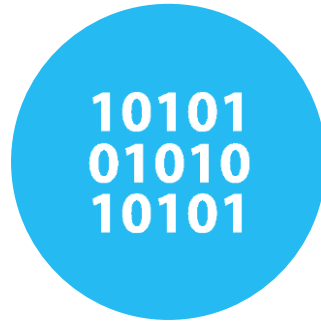
Customer behaviour by Apple or Android phone

# Key Measures



## User Experience

Provide previously unknown (or hard to produce) information on our Customers experience



## Application Performance

- JMX metrics – visibility for DB operations
- Errors & Logging – nuggets of information are recorded
- Garbage Collection – proved useful for finding a raft of problems



## Core Metrics

Transaction average response time, Count, Volume, failure –utilized across most applications



## Journeys

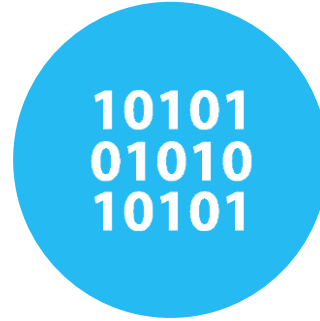
- Transaction flows – visualize & understand key flows & performance bottle necks at a glance
- Web services monitoring –centralized view of all web service calls across our stack

# Key Benefits



## END TO END CUSTOMER VISIBILITY

Provide insight into user behavior, allowing quicker reaction to customer issues



## APPLICATION PERFORMANCE

- Pinpoint the root cause
- Reduced complexity & operations overhead due to systems rationalization
- Improved MTTR



## REAL TIME BUSINESS INSIGHTS

Real time visibility into business impact of issues so team can easily prioritise



Performance management for the digital customer age