IMAC 2014

Inventory Decision Support with Maximo Inventory Insights

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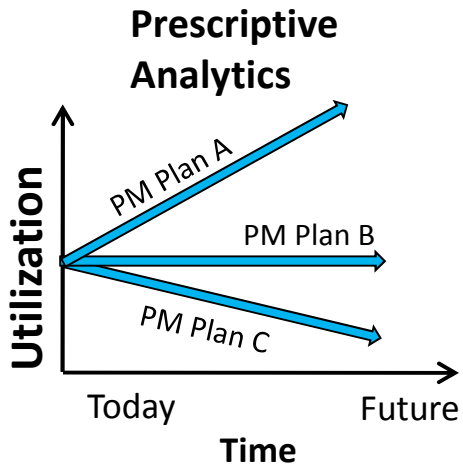
10-Sep-2014

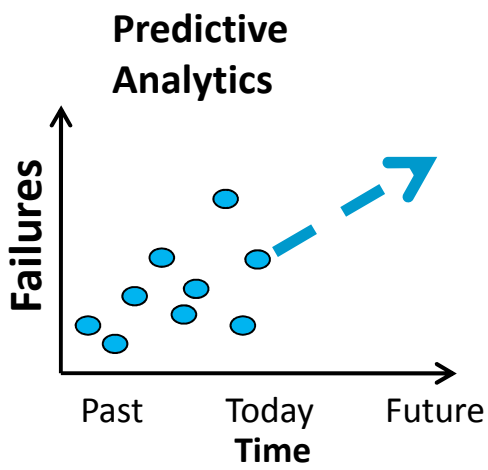
IBM

Agenda

- Overview of IBM Smarter Infrastructure Analytics
- IBM Smarter Infrastructure Analytics Offerings
- IBM Maximo Inventory Insights
- Future Directions and Additional Information

Three most common types of asset analytics





Descriptive	Prescriptive	Predictive
Use Prioritize decisions	Use Optimize outcomes within constraints	Use Anticipate outcomes
Process Aggregate applicable values and apply operands to highlight outliers	Process Incorporates pre-determined variables, rules and decision criteria	Process Prioritizes relevant variables to create trends from historical time-series data
Math Standard: addition, subtraction, multiplication, division	Math Linear, quadratic and integer programming	Math Regression, vector, canonical correlation, multidimensional scaling

IBM Smarter Infrastructure offers advanced analytics today

	Descriptive Analytics	Prescriptive Analytics	Predictive Analytics
Purpose	Provide alerts and diagnostics	Optimize outcomes or prioritizes actions based on rules, budgets and decision priorities	Anticipate issues or exploit opportunities based on time-series data
Typical output	KPI's, metrics	Plans, schedules	Trends, patterns
IBM Smarter Infrastructure Examples	Maximo BI Packs TRIRIGA Workplace Performance Management	Maximo Scheduler Optimization TRIRIGA Facilities Manager, SFP TRIRIGA TREES	Maximo Inventory Insights Predictive Maintenance and Quality (PMQ)
IBM analytics engines	COGNOS	ILOG	SPSS
Sample value	Reduced time to diagnose and resolve project slips	Maximized project team efficiency, based on skills, distance and priority	Increased asset production due to failure avoidance

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Inventory Optimisation
With Maximo Inventory Insights

IBM Maximo Inventory Insights

Pre-configured inventory decision support system, delivered as a service

- **Pre-built** analytics model to predict over-stock and out-of-stock conditions and provide **optimal re-order management**
- **Pre-integrated** software agent automatically acquires necessary data from Maximo database and delivers it to the analytics engine
- Provides **insights** on “stagnant” inventory
- Delivered as a service (**SaaS**)

Reduces inventory holding costs by **15-20%** in first year

Increases asset availability and utilization by avoiding parts outages

Automatically generates optimal stock replenishment plan

What is – Maximo Inventory Insights ?

- **Key Features**
  - Automatically:
    - Extracts required inventory information
    - Profiles inventory environment
    - Prioritizes areas of management focus
    - Recommends optimal reorder points
    - Applies, optionally, new ROP's in Maximo
  - Supports
    - Maximo Asset Management 7.1.x and 7.5.x
    - MAM browsers and operational environments

- **Pricing**
  - Based on Inventory Value
  - Then number of registered Users
  - 12-month initial commitment

- **Available From…**
  - IBM Sales
  - IBM Service Engage
  - Business Partners

- **How it works**
  - **Installation**
    - Customer installs data collector at Maximo database location (15-30 minutes)
    - Data collector extracts initial data and exports to IBM-hosted service
  - **Use**
    - Pre-configured SPSS server hosts model that processes the data
    - HTML reports and views
    - Authorized users will access reports and views, on demand, and apply ROP's
    - Customer inventory-related data and associated analyzed outputs will be stored on the hosted environment
  - **Ongoing**
    - Data collector will update inventory information for the hosted service on a customer-determined schedule
    - IBM will update the offering with additional views, reports and other tuning on a regular basis (approximately every 30 days)

Maximo Inventory Insights Client Value

Large Opportunity for Customers

- Enterprises average over $50M in parts inventory
- Holding costs are 15%-20% of inventory value
- Virtually all enterprises consider themselves over-stocked
- Over 95% of line items have no transactions in 2+ years
- Virtually all EAM customers track parts inventory
- Most competitors have offerings for inventory analytics
- Software and services for SI analytics ~ $500M

Enticing Value Proposition

- Identify and reduce over-stocked and stranded inventory
- Reduce out-of-stock condition for mission-critical asset parts
- Increase asset utilization and productivity

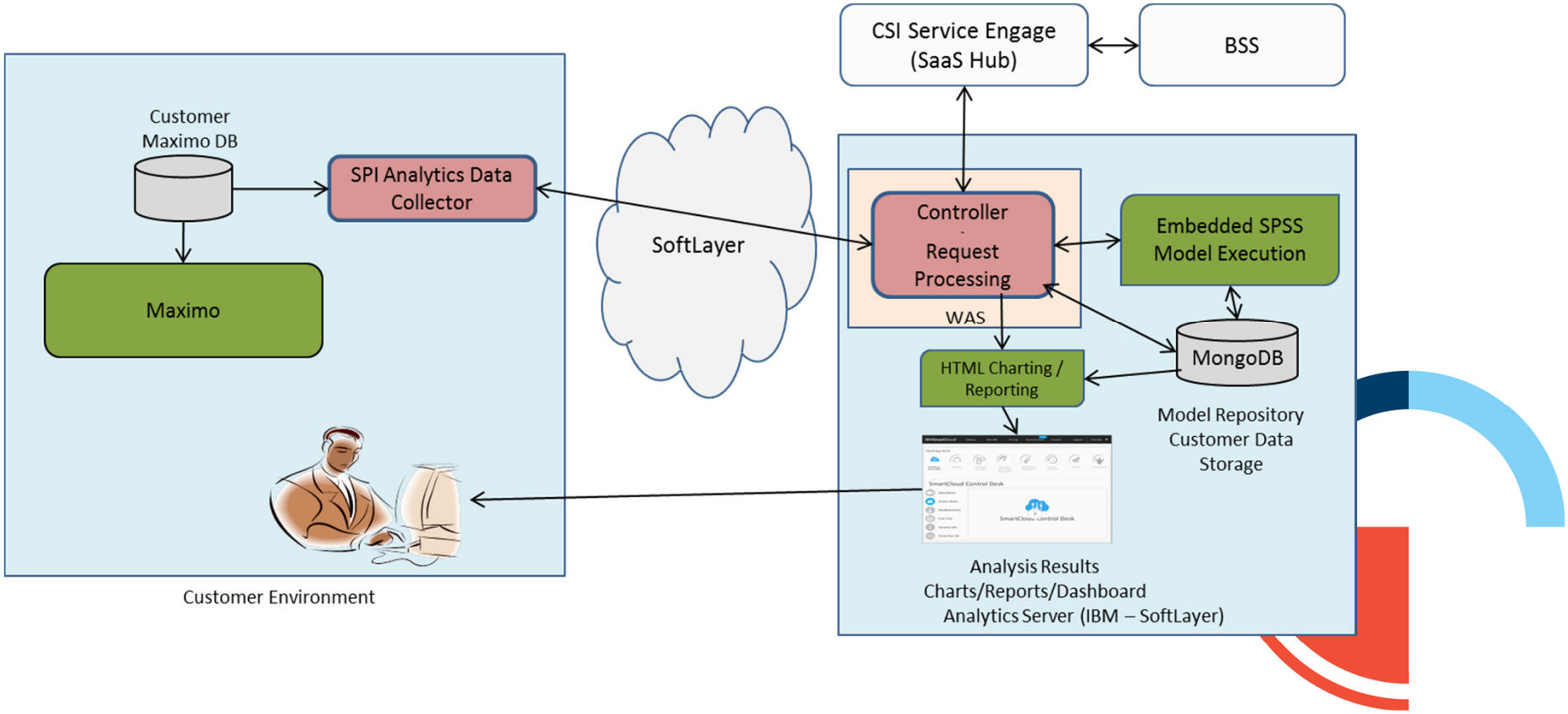
Innovative Offering

- Pre-configured analytics model
- Descriptive, predictive and prescriptive analytics
- SaaS delivery
- Non-invasive add-on to Maximo
- Architecture can be applied to other use cases

Fast Time-to-Value

- Required inventory information already stored in Maximo
- Test run of model can identify and quantify opportunity
- $20M inventory yields $300K-$400K savings potential in first 12 months

Architecture provides automated data collection and SaaS delivery



Inventory Transactions – Data Extract

Tx	QTY	Date	ITEMNUM	CURBAL	SITEID	STORE	LEADTIME	ORDERQTY	MINLEVEL	DESCRIPTION
ISSUE	-1	3/17/2013	RS-14	18	OAK-F43	ST-2	20	24	6	Seal, Rubber, High-Temp
ISSUE	-1	3/17/2013	RS-14	17	OAK-F43	ST-2	20	24	6	Seal, Rubber, High-Temp
ISSUE	-24	3/12/2013	RS-14	0	OAK-F43					Seal, Rubber, High-Temp
INVOICE	0	3/14/2013	RS-14	0	OAK-F43					Seal, Rubber, High-Temp
ISSUE	-4	12/11/2013	RS-14	20	RED-454	ST-2	33	20	8	Seal, Rubber, High-Temp
ISSUE	-1	10/23/2013	BR-1501	1	RED-454	ST-1	19	1	0	Escutcheon, Through Panel Crank
ISSUE	-2	3/25/2012	CL-1921	3	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
RETURN	2	4/27/2012	CL-1921	1	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
RETURN	1	4/27/2012	CL-1921	3	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
ISSUE	-1	10/25/2012	CL-1921	7	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
ISSUE	-1	12/5/2012	CL-1921	6	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
ISSUE	-1	3/18/2013	CL-1921	5	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
ISSUE	-1	4/1/2013	CL-1921	4	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
ISSUE	-3	4/21/2013	CL-1921	3	LAX-R10	ST-1	113	3	2	Bearing, Sealed Roller, L5
RETURN	1	3/10/2012	J-60833	0	LAX-R10	ST-1	96	2	-1	Shield, Drive Assy, External
RETURN	1	3/10/2012	J-60833	1	LAX-R10	ST-1	96	2	-1	Shield, Drive Assy, External
ISSUE	-1	7/18/2012	J-60833	2	LAX-R10	ST-1	96	2	-1	Shield, Drive Assy, External
ISSUE	-1	4/21/2013	J-60833	1	LAX-R10	ST-1	96	2	-1	Shield, Drive Assy, External
RETURN	1	1/5/2012	J-60833	3	DUB-E32	ST-1	12	1	1	Shield, Drive Assy, External
ISSUE	-1	10/18/2013	J-60833	2	OAK-F43	ST-1	0	1	0	Shield, Drive Assy, External
RETURN	1	10/23/2013	J-60833	1	OAK-F43	ST-1	0	1	0	Shield, Drive Assy, External
ISSUE	-1	7/18/2012	M-421	1	LAX-R10	ST-1	35	2	0	Shaft, Drive, Rear
ISSUE	-2	8/20/2013	PJB-3510	16	DUB-E32	ST-2	28	1	0	Insert, Teflon, High Load

Analyze inventory transaction information for the last 2 or more years in combination with purchasing information such as lead-time and pre-determined order quantity

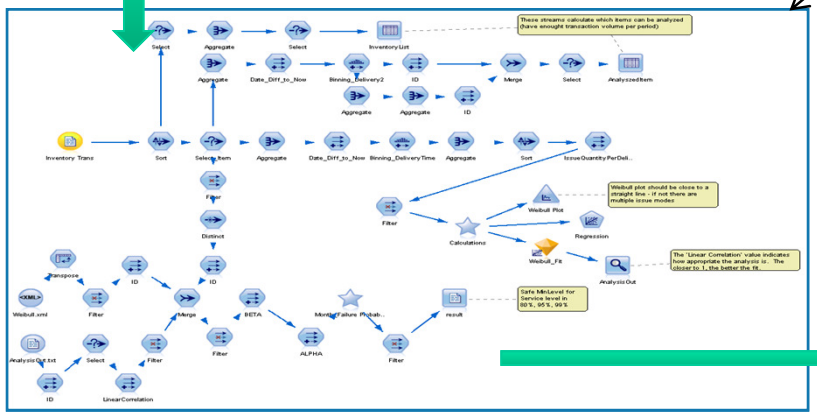
Calculate suggested reorder point

List the item, the current reorder point value, the suggested value, the quantity delta and the cost delta

Increase re-order point to prevent out-of-stock

Decrease re-order point to reduce over-stock

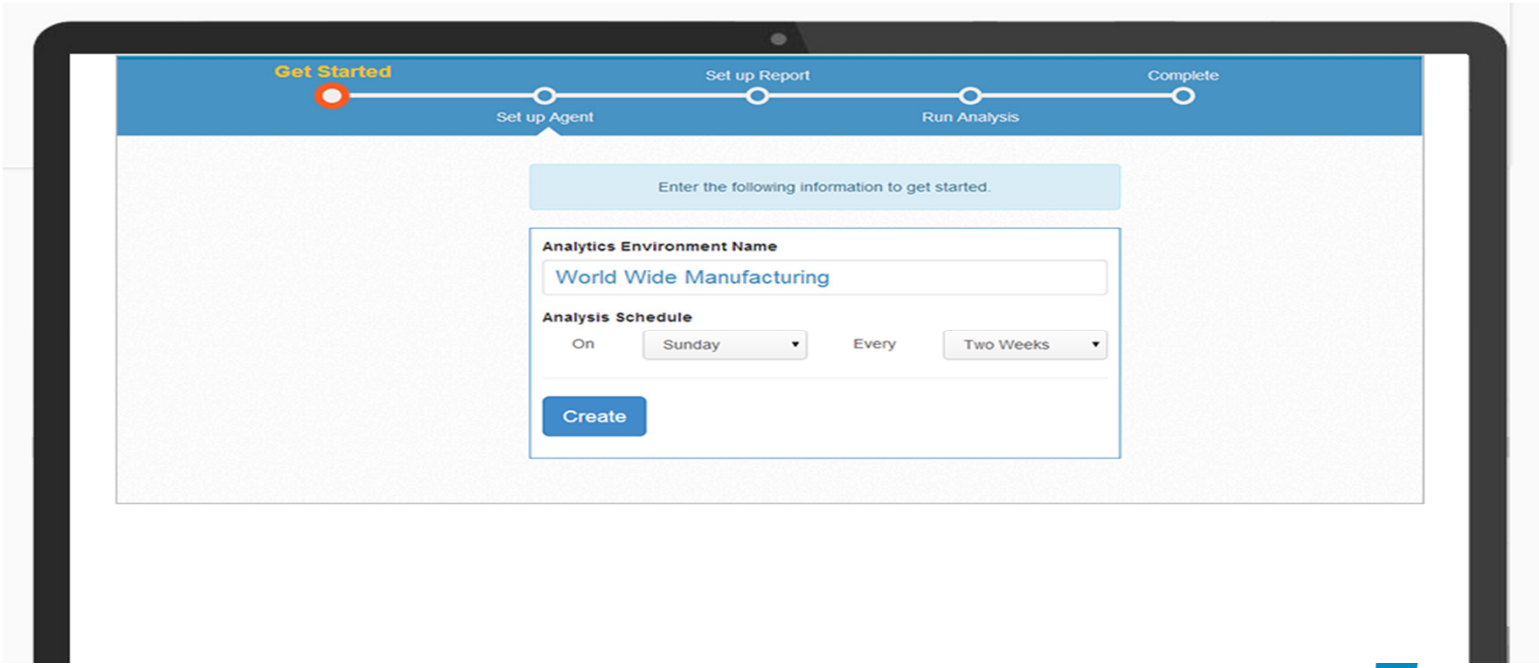
SPSS Model Stream



	Item	Site	Store	Lead	Last Cost	Min Level	Min Value	95% SL	Delta	Value	Savings	Description
2	RS-14	OAK-F43	ST-2	26	$2.36	12	$28.32	31	19	$73.16	($44.84)	Seal, Rubber, High-Temp
3	RS-15	OAK-F43	ST-2	6	$2.08	10	$20.80	29	19	$60.32	($39.68)	Seal, Rubber, High-Temp
4	PJB-6530	OAK-F43	ST-2	6	$9.25	5	$46.25	8	3	$74.00	($27.75)	Valve, Shield, Drive Assy, External
5	AR-608	OAK-F43	ST-1	38	$32.74	65	$2,128.10	70	5	$2,291.80	($163.70)	Housing, Trans Drive
6	AR-618	OAK-F43	ST-1	13	$115.00	8	$920.00	16	8	$1,840.00	($920.00)	Housing, Trans Drive
7	J-22411	LAX-R10	ST-1	12	$161.92	6	$971.52	48	42	$7,772.16	($6,800.64)	Shaft, Trans Drive
8	J-56322	LAX-R10	ST-1	20	$673.00	5	$3,365.00	7	2	$4,711.00	($1,346.00)	Assembly, Module, Low Freq
9	J-60833	LAX-R10	ST-1	40	$445.00	10	$4,450.00	11	1	$4,895.00	($445.00)	Shield, Drive Assy, External
10	BR-1501	LAX-R10	ST-1	137	$147.00	5	$735.00	16	11	$2,352.00	($1,617.00)	Escutcheon, Through Panel Crank
11	BR-2832	LAX-R10	ST-1	24	$217.75	8	$1,742.00	10	2	$2,177.50	($435.50)	Pump, Liquid, Low Pressure
12	BR-39043	LAX-R10	ST-1	3	$119.00	40	$4,760.00	16	(24)	$1,904.00	$2,856.00	Bearing, Sealed, Roller, L10
13	CL-1921	LAX-R10	ST-1	10	$29.95	100	$2,995.00	84	(16)	$2,515.80	$479.20	Bearing, Sealed, Roller, L5
14	J-75044	SND-02	ST-1	36	$23.33	60	$1,399.80	59	(1)	$1,376.47	$23.33	Bearing, Sealed, Roller, L4
15	PJB-1527	SND-02	ST-1	32	$120.00	36	$4,320.00	37	1	$4,440.00	($120.00)	Housing, Trans Drive
16	BR-49044	SND-02	ST-1	29	$119.00	50	$5,950.00	69	19	$8,211.00	($2,261.00)	Bearing, Sealed, Roller
17	M-421	SND-02	ST-1	10	$184.50	5	$922.50	3	(2)	$553.50	$369.00	Shaft, Drive, Rear
18	AR-608	DUB-E32	ST-2	91	$34.46	8	$275.68	74	66	$2,550.04	($2,274.36)	Housing, Trans Drive
19	J-02355	LAS-P5	ST-2	20	$9.52	6	$57.12	11	5	$104.72	($47.60)	Belt, Flat, PTO
20	J-72766	LAS-P5	ST-2	32	$36.40	12	$436.80	4	(8)	$145.60	$291.20	Lens, Polycarb
21	RS-13	LAS-P5	ST-2	29	$2.50	16	$40.00	53	37	$132.50	($92.50)	Seal, Rubber, High-Temp
22	RS-14	LAS-P5	ST-2	29	$2.16	24	$51.84	164	140	$354.24	($302.40)	Seal, Rubber, High-Temp
		LAS-P5	ST-2	29	$2.09	24	$50.16	196	172	$409.64	($359.48)	Seal, Rubber, High-Temp
24	J-75077	LAS-P5	ST-2	28	$26.38	24	$633.12	49	25	$1,292.62	($659.50)	Bearing, Sealed, Roller
25	PJB-3510	LAS-P5	ST-2	17	$30.34	11	$333.74	27	16	$819.18	($485.44)	Insert, Teflon, High Load
26	PJB-4521	LAS-P5	ST-2	29	$15.00	32	$480.00	4	(28)	$60.00	$420.00	Nozzle, Air-Fuel, Stage 1

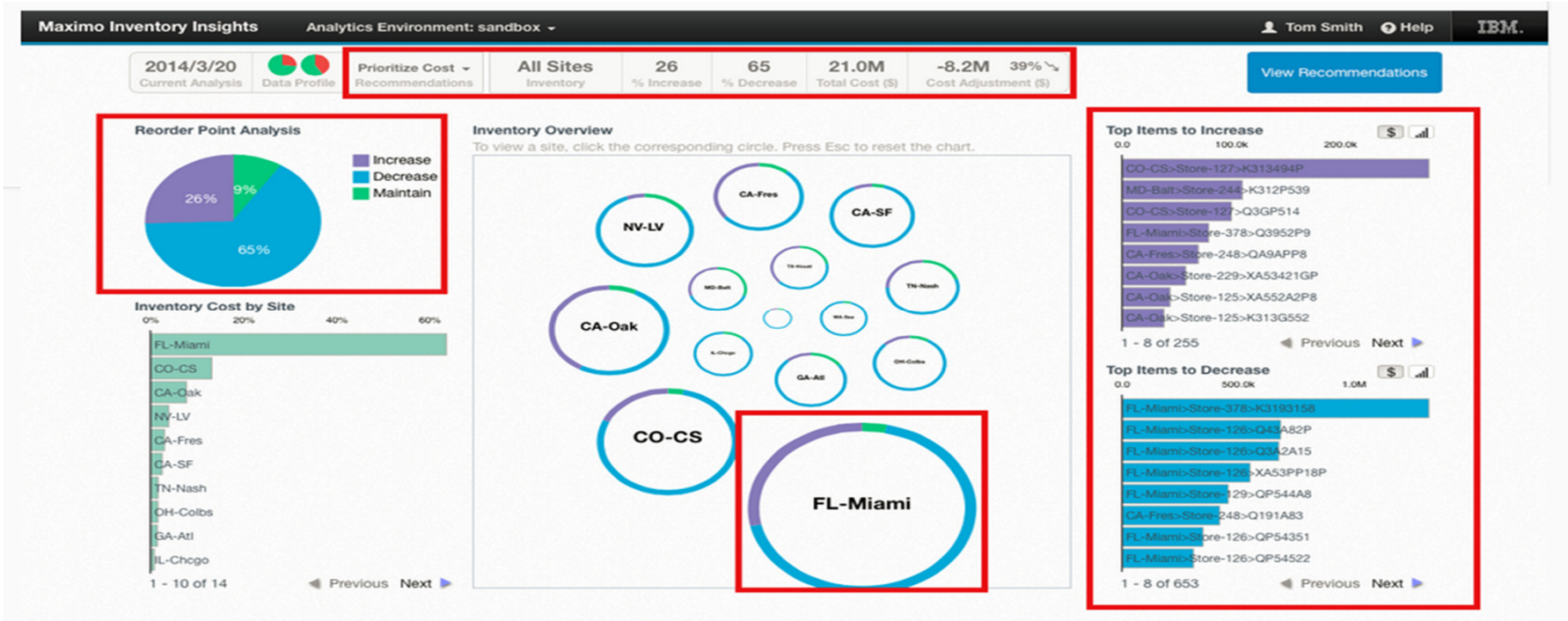
Analysis Results – Current and Suggested Reorder Point Qty

Extracts inventory data from Maximo Asset Management system

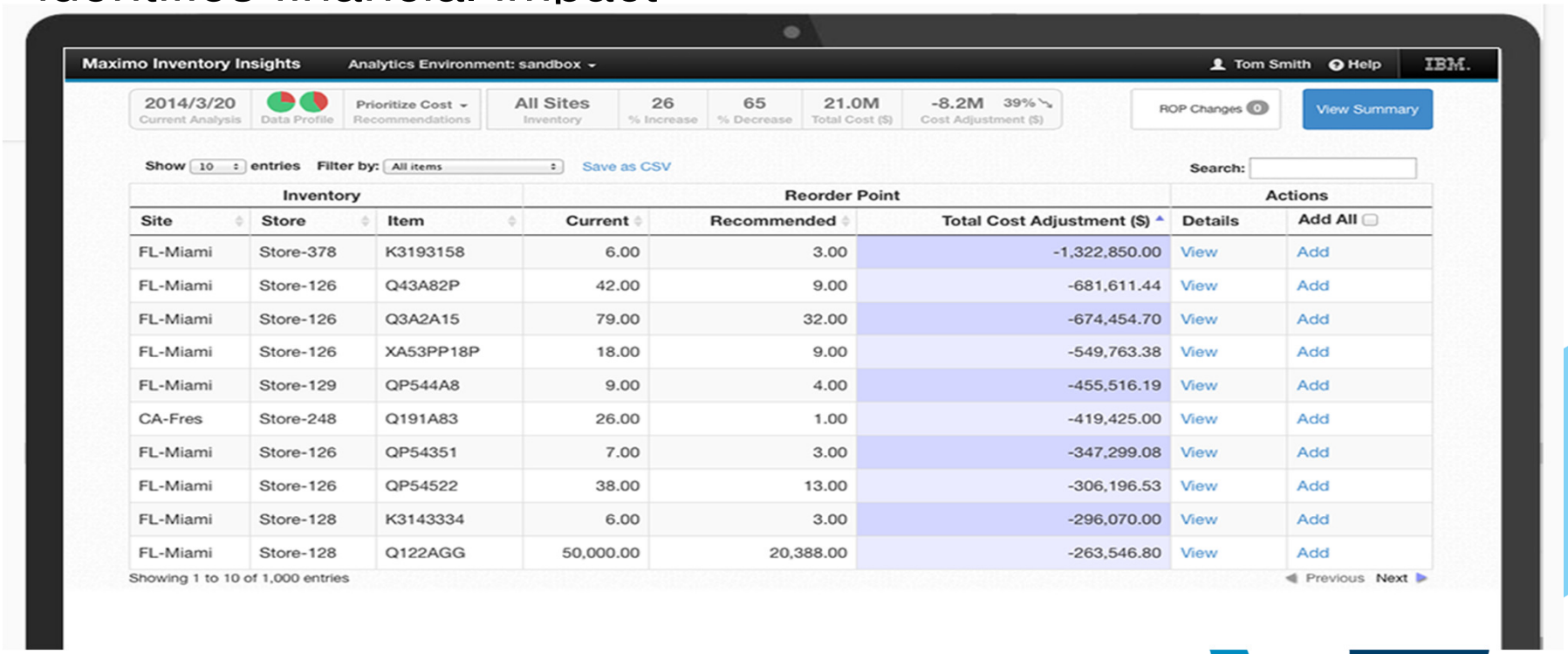


Profiles Maximo inventory environment

Prioritizes areas of management focus

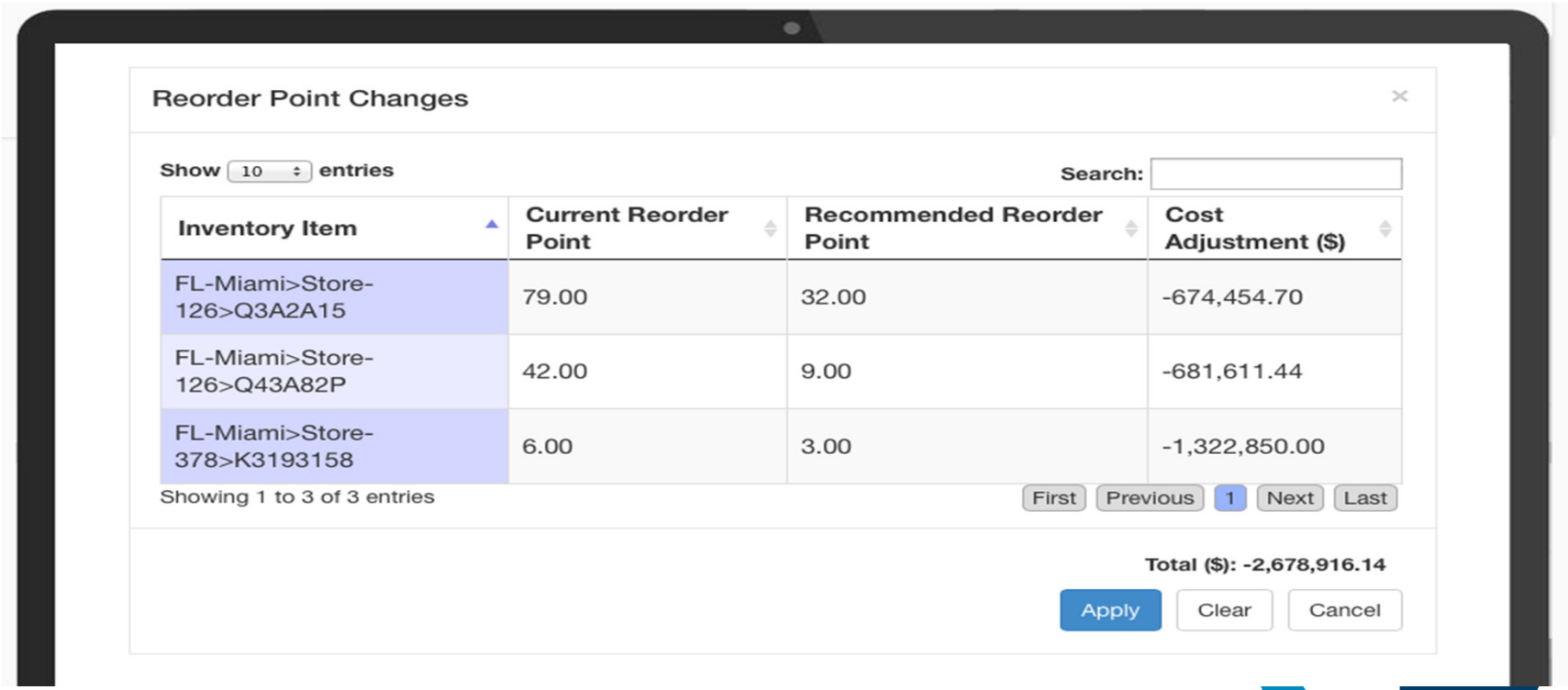


Recommends optimal reorder points and identifies financial impact



Inventory			Reorder Point			Actions	
Site	Store	Item	Current	Recommended	Total Cost Adjustment ($)	Details	Add All
FL-Miami	Store-378	K3193158	6.00	3.00	-1,322,850.00	View	Add
FL-Miami	Store-126	Q43A82P	42.00	9.00	-681,611.44	View	Add
FL-Miami	Store-126	Q3A2A15	79.00	32.00	-674,454.70	View	Add
FL-Miami	Store-126	XA53PP18P	18.00	9.00	-549,763.38	View	Add
FL-Miami	Store-129	QP544A8	9.00	4.00	-455,516.19	View	Add
CA-Fres	Store-248	Q191A83	26.00	1.00	-419,425.00	View	Add
FL-Miami	Store-126	QP54351	7.00	3.00	-347,299.08	View	Add
FL-Miami	Store-126	QP54522	38.00	13.00	-306,196.53	View	Add
FL-Miami	Store-128	K3143334	6.00	3.00	-296,070.00	View	Add
FL-Miami	Store-128	Q122AGG	50,000.00	20,388.00	-263,546.80	View	Add

Applies new reorder points in the Maximo Asset Management system



Market Validation

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"We would like to evaluate appropriate inventory levels. Based on usage, do we have enough, too many or too few items in our warehouses? How many times has a work order started that was delayed because necessary inventory was not in the warehouse? What is our inventory turnover level?"

—Greg Barfield, Southern Power, a Southern Company

SOUTHERN POWER
A SOUTHERN COMPANY

"There is a huge bias towards overstocking."

"ERP data is not good for parts data for EAM."

"There is lots of opportunity here."

—Ralph Rio and Greg Gorbach, ARC Advisory

ARC Advisory Group

Customer Validation

"The information is presented in a coherent and interesting manner."

"I think it looks great."

—Roger Finigan, Keyera Energy

KEYERA

"It looks good. It's straightforward. It's simple."

"If we can have the system make changes en masse, that saves us a lot of time and effort."

—Gord Prince, Mosaic

Mosaic

"I like the ability to look at the graph and get a feel for the magnitude."

"It's really for a managerial-director level."

"It's a new style of presentation that I find really valuable. I haven't seen that in Maximo before."

—Mark Schoenike, Cummins

Cummins

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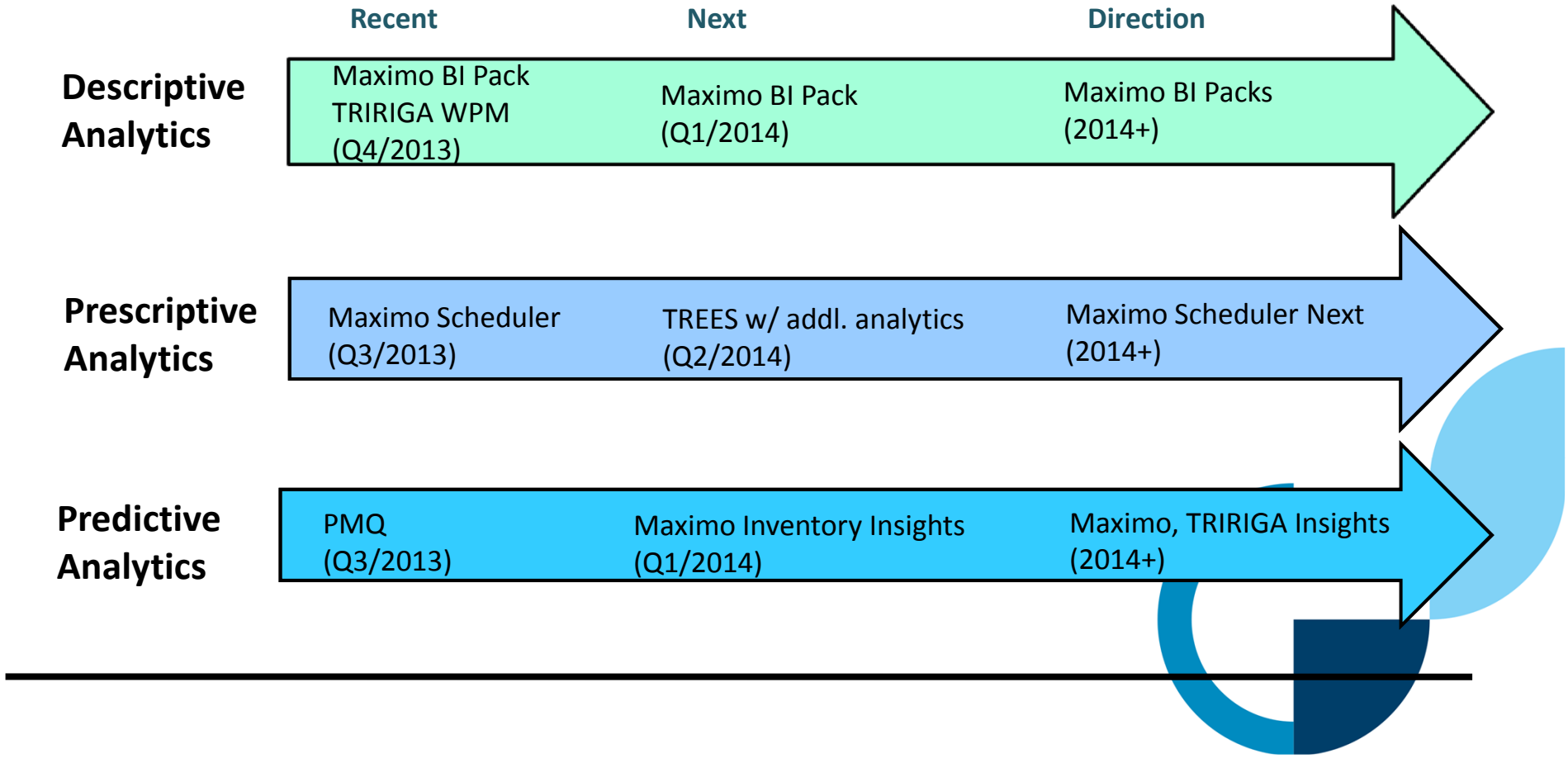
Smarter Infrastructure Directions

Smarter Infrastructure analytics directions



Additional Information

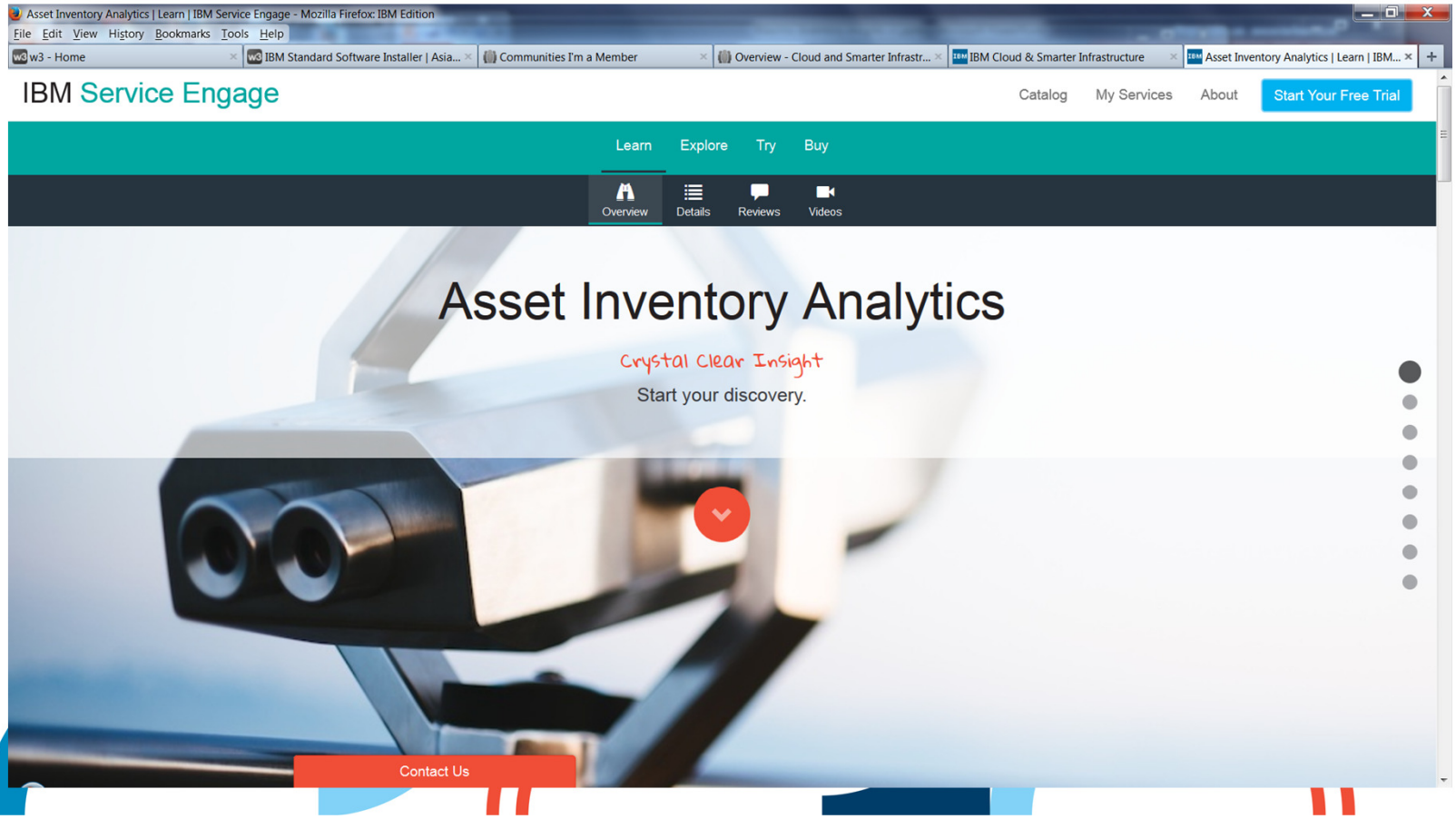
Additional information for Maximo offerings

- **Maximo Asset Management BI Packs**
  - ISM Library: https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10MA51
- **Maximo Asset Management Scheduler Optimization**
  - http://www-01.ibm.com/software/tivoli/products/maximo-asset-mgmt-scheduler/
- **Maximo Inventory Insights**
  - http://www.ibmserviceengage.com

Can Maximo Inventory Insights deliver business benefits to your company?

- **Does your organisation manage Inventory with Maximo or inside the ERP?**
- **Does your organisation manage inventory in Storerooms or via Direct Issue?**
- **Have you configured Maximo to automatically generate a Purchase Order when the Inventory balance drops below the Item's Reorder Point?**
- **Does your organisation have at least 12 months of Inventory Issue transactions?**
- **Does your organisation want to improve Inventory Management or Reduce Inventory Holding Costs?**

Contact me to discuss a Free 30 day Trial with no commitment at the end.


Asset Inventory Analytics | Learn | IBM Service Engage - Mozilla Firefox: IBM Edition
File Edit View History Bookmarks Tools Help
w3 - Home
IBM Standard Software Installer | Asia...
Communities I'm a Member
Overview - Cloud and Smarter Infrastr...
IBM Cloud & Smarter Infrastructure
Asset Inventory Analytics | Learn | IBM...
IBM Service Engage
Catalog
My Services
About
Start Your Free Trial
Learn
Explore
Try
Buy
Overview
Details
Reviews
Videos
Asset Inventory Analytics
Crystal Clear Insight
Start your discovery.
Contact Us

Additional information for Smarter Infrastructure analytics

- **White Papers**
  - "Harness the value of big data to build smarter infrastructures"
    - http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=SWGE_TI_EA_USEN&htmlfid=TIW14160USEN&attachment=TIW14160USEN.PDF
  - "Descriptive, predictive, prescriptive: Transforming facilities and asset management with analytics"
    - http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=SWGE_TI_EA_USEN&htmlfid=TIW14162USEN&attachment=TIW14162USEN.PDF
- **Announcement of IBM Maximo Inventory Insights**
    - http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=897/ENUSC14-014&appname=USN#214-110

Glossary

- **Descriptive analytics**
  - Most common type of business analytics, most commonly focused on historical and current data, and applying standard mathematical operands to generate metrics and key performance indicators (KPI)
- **Inventory optimization**
  - A range of processes and business analytics that combine to establish inventory levels consistent with the financial and operational objectives and priorities of an organization
- **Predictive analytics**
  - A type of business analytics that incorporates and prioritizes relevant variables for creating trends and patterns, and anticipating outcomes with a degree of confidence
- **Prescriptive analytics**
  - A type of business analytics that applies rules and constraints to achieve a desired operational or financial objective
- **Service Engage**
  - IBM's portal for evaluating and purchasing IBM's software-as-a-service offerings
- **Value-based pricing**
  - A type of pricing model that highlights, and serves as a proxy for, the potential measurable value of the offering