

# Cognitive Supply Chain Advisors

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How AI enabled solutions help IBM's supply professionals do their best work ever

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Senior Technical Staff Member



# Our Supply Chain



## Demand & Supply

Customer Demand Uncertainty  
SC Partner Capacities & Performance  
Disruptions / Unplanned Events  
Industry Constraints  
Product Transitions (Rate & Pace)

-> permanent trade-off decisions

## Manufacturing / Engineering

Product/Solution Complexity  
Shorter Product Cycles  
Highest Quality Expectation  
Speed Assembly & Quality Control  
Missing Installation Data  
Unjustified Warranty Claims

-> continuously optimize

## Trade & Logistics

Track & Trace  
Lost & Damage  
SC Partner Capacities & Performance  
Risk of Incompliance  
Complex Trade Partner Invoicing

-> hands off - eyes on

## Cross Functional / General

Complex Collaboration  
Data Issues (distributed, inconsistent, overwhelming)  
Shrinking Workforce  
Losing Experience

-> democratized knowledge & experience

## Our Challenges

## Globally Integrated Enterprise



- Streamlined Global processes
- Information sharing
- Harmonization

## Transparent Supply Chain

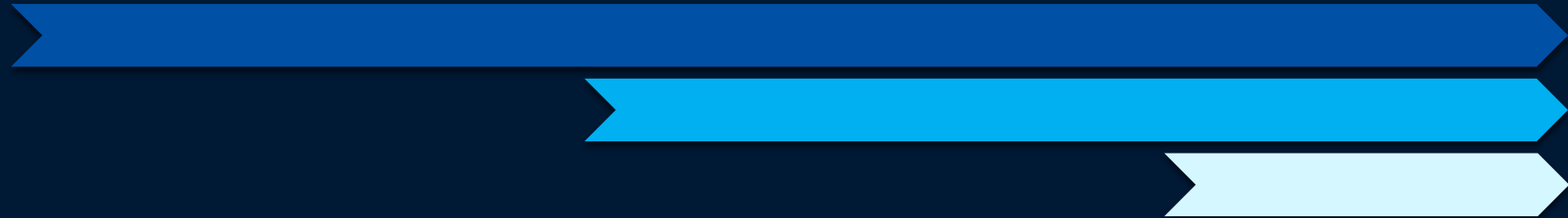


- Supply Chain Transparency
- Advanced Analytics
- Mobile Access

## Smart Supply Chain



- Cognitive / Learning
- Trusted Transactions
- Data Driven /Digitally Executed



# Our Transformation





**1 Discover  
& Alert**

**2 Analyze &  
Understand**

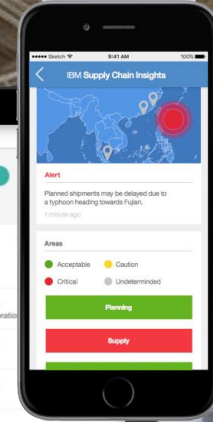
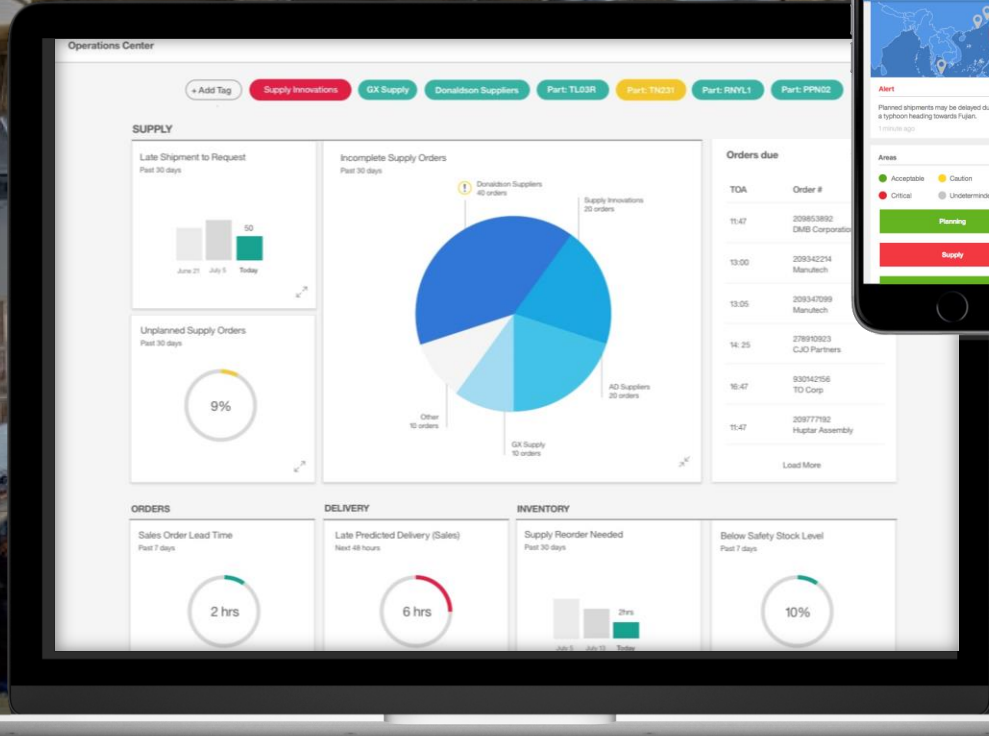
**4 Learn &  
Predict**

**3 Interact &  
Resolve**

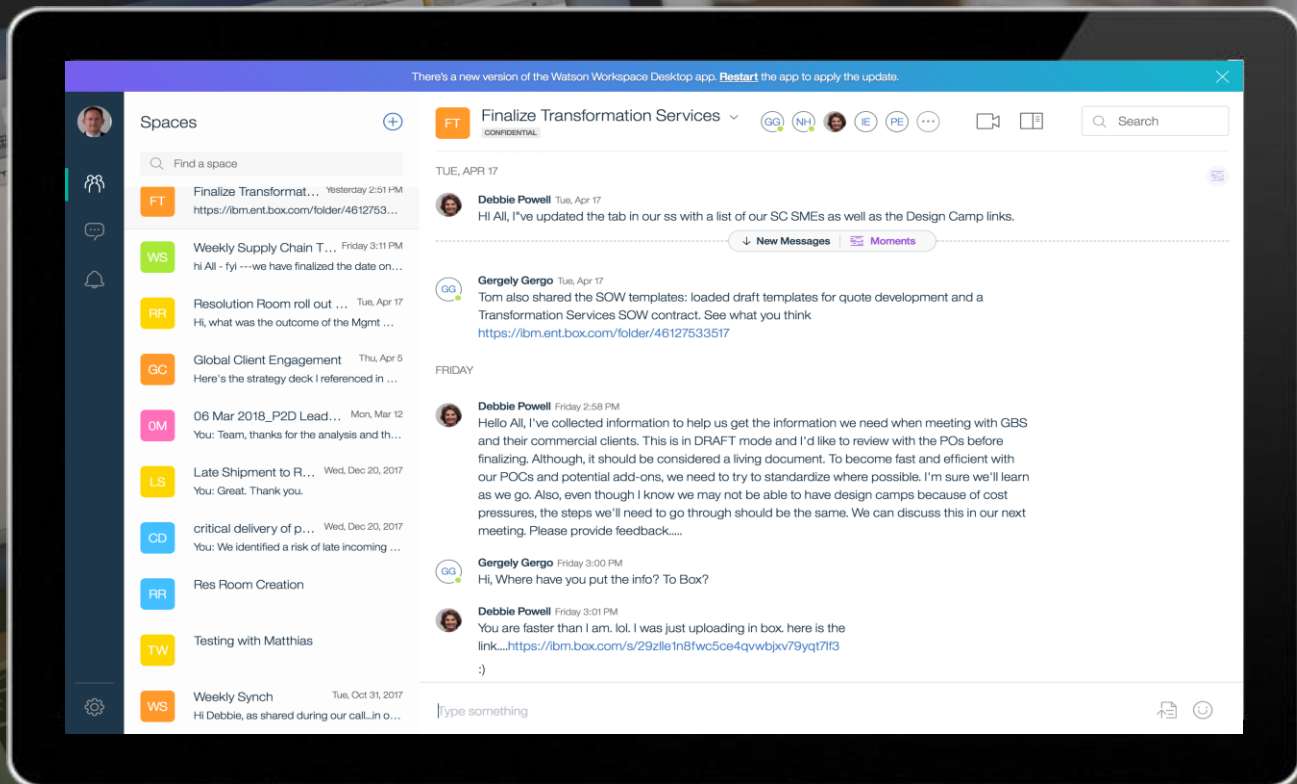




# Predict, Discover



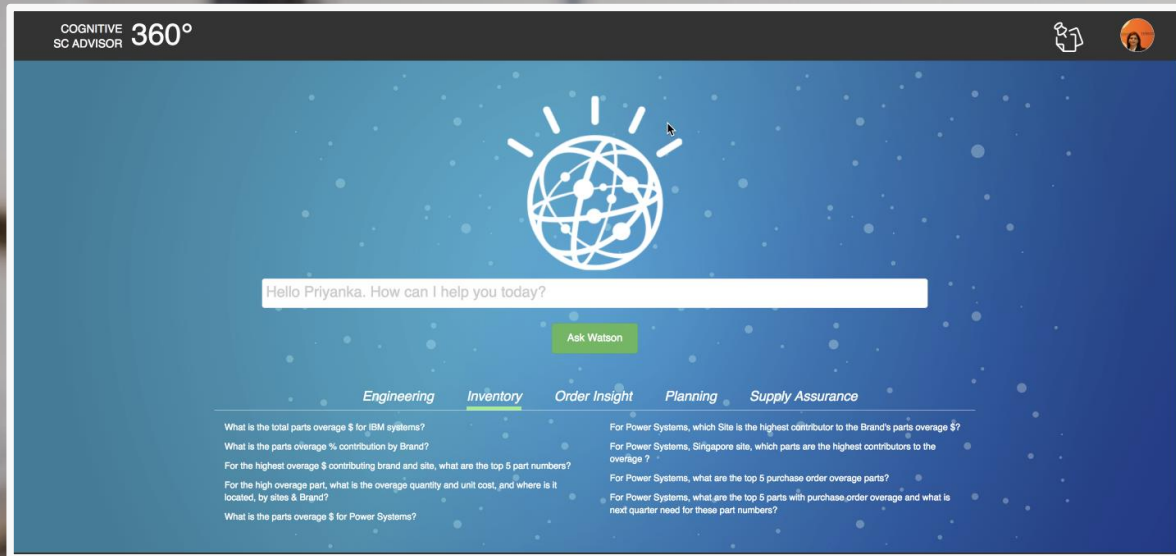
# Alert



# Reason, Resolve & Learn



## LIVE DEMO



COGNITIVE SC ADVISOR 360°

Hello Priyanka. How can I help you today?

Ask Watson

*Engineering* *Inventory* *Order Insight* *Planning* *Supply Assurance*

What is the total parts coverage \$ for IBM systems?  
 What is the parts coverage % contribution by Brand?  
 For the highest coverage \$ contributing brand and site, what are the top 5 part numbers?  
 For the high coverage part, what is the coverage quantity and unit cost, and where is it located, by sites & Brand?  
 What is the parts coverage \$ for Power Systems?

For Power Systems, which Site is the highest contributor to the Brand's parts coverage \$?  
 For Power Systems, Singapore site, which parts are the highest contributors to the coverage ?  
 For Power Systems, what are the top 5 purchase order coverage parts?  
 For Power Systems, what are the top 5 parts with purchase order coverage and what is next quarter need for these part numbers?

COGNITIVE SC ADVISOR

360°

Chat icons: speech bubble, list, person

Powered by Watson

### Conversation

What are the Overall Part Shortages?  
21 Dec 2017 09:23:02

Overall Part Shortages are:  
Forecast 1,774 P/Ns  
Orders 1,076 P/Ns  
21 Dec 2017 09:23:05

What are the Overall Part Shortages with Buyer Code SHL  
21 Dec 2017 09:23:28

I recognize the following Buyer Code(s):  
SHL

Overall Part Shortages are:  
Orders 23 P/Ns  
Forecast 82 P/Ns  
21 Dec 2017 09:23:33

What do you want to ask Watson?

What are the Overall Part Shortages with Buyer Code SHL

#### Overall Part Shortages (# of P/Ns)

Buyer Code(s): SHL

Overall Covered: 507 (82.8%)

#### Overall Part Shortages (# of P/Ns)

Buyer Code(s): SHL

Conversation ✕

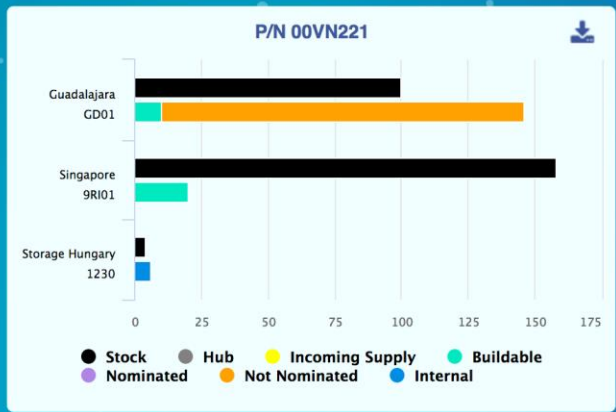
Show the PN details for 00VN221  
20 Mar 2018 08:27:19

PN 00VN221 has shortages to orders in Guadalajara of 46 parts for Not Nominated orders., in Storage Hungary of 2 parts for Not Nominated orders. Additional sources of supply could be in transit, commits from supplier, FG, S&U, Engineering/Quality locs. Unfortunately I don't have that information yet. Try checking with S Pulido, Pablo (Guadalajara), Gyongyi Vincze (Storage Hungary).  
There is one alternate part identified. In aggregate, we have 2953 parts in inventory to support 3141 orders. For Guadalajara, In Total 1421/46 parts shortage can be covered by Alt Parts at the site - Alt p/n 00VN209 has 1421 piece(s) with no orders. For Storage Hungary, I see no alternate parts inventory available. For Storage Hungary, I have found that Total 2/2 can be covered by Rebalancing (incl Alt Parts at other site).  
For Guadalajara, Alt PN 00VN209 has 1421 piece(s) with no orders.  
For Singapore, Alt PN 00VN209 has 255 piece(s) with no orders.

👍 🗨️ 20 Mar 2018 08:27:26



Show the PN details for 00VN221



### P/N 00VN221

Part Number	00VN221
Part Description	800GB MLC SED SSD SAS
Supplier	
WW Suppliers	
Site Name	Guadalajara
Plant Line Code	GD01
Buyer Name(s)	
Brand	POWER
Council	STORAGE
Last Update Timestamp	2018-03-20 00:47 UTC
Alternative Parts	00VN209 AGGREGATE
Transvoyant	00VN221
Orders	SACP Report
Forecast Horizon	Rolling 13 weeks
Order Horizon	SOAR total order load

### P/N 00VN221

Location	Status	Buildable	Nominated	Not Nominated	Internal	Total Orders	Order Shortage	SOAF
Guadalajara GD01	NOT NOMINATED SHORTAGE	10	0	136	0	146	-46	100
Singapore 9RI01	FORECAST SHORTAGE	20	0	0	0	20	138	158
Storage Hungary 1230	NOT NOMINATED SHORTAGE	0	0	0	6	6	-2	4
<b>Total WW</b>		<b>30</b>	<b>0</b>	<b>136</b>	<b>6</b>	<b>172</b>	<b>90</b>	<b>262</b>

What do you want to ask Watson?



Conversation



Terminated storage provided the details in the results section.

19 Mar 2018 22:05:33

Total number of orders are Nominated for Storage?

19 Mar 2018 22:06:54

**IBM Confidential** : I have found the total backlog Storage : 3283 Nominated orders for all PSSD. Details are available in my results section.

19 Mar 2018 22:06:58

Total number of orders are Nominated for Storage HUNGARY?

19 Mar 2018 22:07:29

**IBM Confidential** : I have found the total backlog Storage at 9RH: 151 Nominated orders for all PSSD. I provided the details in the results section.

19 Mar 2018 22:07:33

What is the status order 889SSN?

19 Mar 2018 22:18:30

**IBM Confidential** : I found BOX Order 889SSN is firm, it has started build with a Buildable status and is in the Test of the manufacturing process

[Link to WW Order Load Report](#)  
[Link to All Orders Report](#)  
[Link to SACP Dashboard](#)

19 Mar 2018 22:18:37

What do you want to ask Watson?



What is the status order 889SSN?



**BOX Order 889SSN**  
**Test**  
**Firm Buildable STORAGE**

**Does not require TDA**

Ship to: [redacted] ..  
 Sold to: [redacted] ..  
 Rev: [redacted]



○	RSSD 2018-03-06	Today
○	CRAD 2018-03-17	
●	PSSD 2018-04-03	

**IBM Confidential** : MFGN 1AUFHP1 is composed of :

MFGN	Order No	Mfg Agg / Mfg Status
1AUFHP1	889SSN	Test
1AUFHP1	889SSP	Test
1AUFHP1	889SSQ	Test
1AUFHP1	889SSR	Test

**Total Records: 4**

**Order 889SSN is sourced at Hungary - 9RH. There are no part shortages for this Order.**

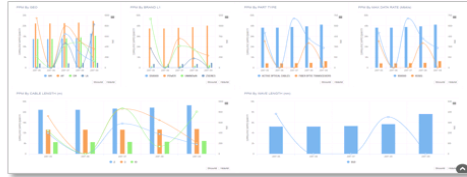
No data available in table

**Total Records: 0**

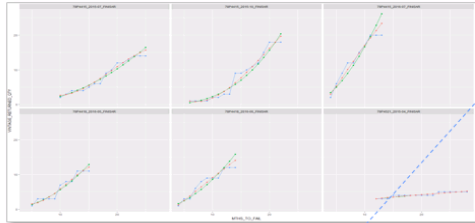
# WATSON QUALITY ADVISOR



### Field Performance Analysis



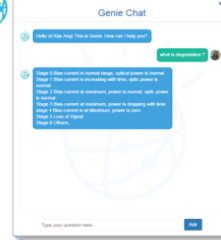
### Field Performance Prediction



### Cognitive Search Bar



### Watson Conversation Chat



### User Sentiment Analysis Feedback Form



### Optical News



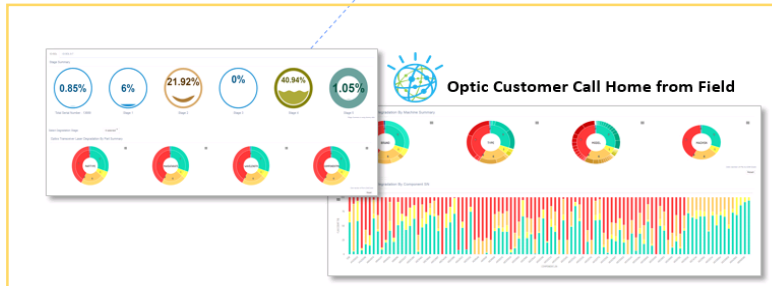
### User Tutorial



### Birth Data From Optical Supplier



### Optic Customer Call Home from Field



IBM | Home | **Storms** | Alerts | Administration | Fibers | ForwardHub

Risks: **MERANTID06** | Alerts | Overview | Analytics | Weather | Tweets | News | Map Configurations | My Alerts | **Reset**

September 13 2016 8 PM

WindSpeed: 172 mph Category: 5 Latitude: 21 Longitude: 120 Hourly Precip: - inches Total Precip: - inches

**Email MERANTID06** | View | Subscribe

AutoZoom  Plan to Storm  All Storms

Consider events since: 2016-09-01 **Refresh**

Impacting Events  
 All Events

Suppliers  Sites  Data Centers  
 In United States

Shantou Chaoyang

IBM/supplier/ Yiqun Rd, Nanzi District, Kaohsiung City, Taiwan 81923,120

IBM/supplier/PMC-Siemens

IBM PRECISION LOGISTICS

HOW DETAILS

Part # 01DHS77 Dest: IBM COMMERCIALIZACION Y PTA: 2017/08/04 18:00 Local PTA/Loc/Part: COL LAS PINTAS JAL, MX

DEMAND ORDER PLAN	TRACKING EVENTS	ROUTE	
	In transit (TA YUAN HSANG, TW)		2017/08/03 23:00 CST
	In transit (TA YUAN HSANG, TW)		2017/08/01 20:30 CST
	In transit (BAYAN LEPAIS, MY)		2017/08/01 14:31 MYT
	In transit (SAMUTPRAKARN, TH)		2017/08/01 07:13 ICT
	In transit (SAMUTPRAKARN, TH)		2017/08/01 07:04 ICT
	Left FWH in origin facility (CHONBURI, TH)		2017/07/31 15:50 Local
	Picked up (CHONBURI, TH)		2017/07/31 13:57 Local
	Shipment information sent to FWH		2017/07/30 23:17 Local

IBM Power System Express (model 5959-120)

Network configuration table:

Device	IP	MAC	Vendor	Model	Serial	Port
eth0	10.10.10.1	08:00:27:00:00:01	IBM	IBM	IBM	eth0
eth1	10.10.10.2	08:00:27:00:00:02	IBM	IBM	IBM	eth1
eth2	10.10.10.3	08:00:27:00:00:03	IBM	IBM	IBM	eth2
eth3	10.10.10.4	08:00:27:00:00:04	IBM	IBM	IBM	eth3
eth4	10.10.10.5	08:00:27:00:00:05	IBM	IBM	IBM	eth4
eth5	10.10.10.6	08:00:27:00:00:06	IBM	IBM	IBM	eth5
eth6	10.10.10.7	08:00:27:00:00:07	IBM	IBM	IBM	eth6
eth7	10.10.10.8	08:00:27:00:00:08	IBM	IBM	IBM	eth7
eth8	10.10.10.9	08:00:27:00:00:09	IBM	IBM	IBM	eth8
eth9	10.10.10.10	08:00:27:00:00:0A	IBM	IBM	IBM	eth9
eth10	10.10.10.11	08:00:27:00:00:0B	IBM	IBM	IBM	eth10
eth11	10.10.10.12	08:00:27:00:00:0C	IBM	IBM	IBM	eth11
eth12	10.10.10.13	08:00:27:00:00:0D	IBM	IBM	IBM	eth12
eth13	10.10.10.14	08:00:27:00:00:0E	IBM	IBM	IBM	eth13
eth14	10.10.10.15	08:00:27:00:00:0F	IBM	IBM	IBM	eth14
eth15	10.10.10.16	08:00:27:00:00:10	IBM	IBM	IBM	eth15
eth16	10.10.10.17	08:00:27:00:00:11	IBM	IBM	IBM	eth16
eth17	10.10.10.18	08:00:27:00:00:12	IBM	IBM	IBM	eth17
eth18	10.10.10.19	08:00:27:00:00:13	IBM	IBM	IBM	eth18
eth19	10.10.10.20	08:00:27:00:00:14	IBM	IBM	IBM	eth19
eth20	10.10.10.21	08:00:27:00:00:15	IBM	IBM	IBM	eth20
eth21	10.10.10.22	08:00:27:00:00:16	IBM	IBM	IBM	eth21
eth22	10.10.10.23	08:00:27:00:00:17	IBM	IBM	IBM	eth22
eth23	10.10.10.24	08:00:27:00:00:18	IBM	IBM	IBM	eth23
eth24	10.10.10.25	08:00:27:00:00:19	IBM	IBM	IBM	eth24
eth25	10.10.10.26	08:00:27:00:00:1A	IBM	IBM	IBM	eth25
eth26	10.10.10.27	08:00:27:00:00:1B	IBM	IBM	IBM	eth26
eth27	10.10.10.28	08:00:27:00:00:1C	IBM	IBM	IBM	eth27
eth28	10.10.10.29	08:00:27:00:00:1D	IBM	IBM	IBM	eth28
eth29	10.10.10.30	08:00:27:00:00:1E	IBM	IBM	IBM	eth29
eth30	10.10.10.31	08:00:27:00:00:1F	IBM	IBM	IBM	eth30

## DBugD2 - System reference/error code Lookup

Search for an SRC or error number below:

SRC to search  
**B113E504**

Select the MFG Site  
**Power Guadalajara MAPICS**

**B113E504 Fix Suggestions**

Fix	Success Rate
REPLACED MODULE FAILED IN CORNER (00KVB34 MODULE P8M214...	66.57 %
REPLACED MODULE FAILED AT CORNER (00JM258 MODULE P8M21...	63.69 %
REPLACED MODULE IN CORNER (00UM257 MODULE P8M214 10CS1...	63.4 %
REPLACED MODULE FAILED CORNER STX (00NE651 MODULE P8V20...	61.1 %
REPLACED MODULE FAILED CNR12 (00NG976 MODULE P8M214 12C...	58.79 %
REPLACED NEW MODULE (00KY836 MODULE P8M214 6CS19 P1 C32)	58.79 %

**SEARCH**





# We teach **Watson** Supply Chain.



**Demand Planning**



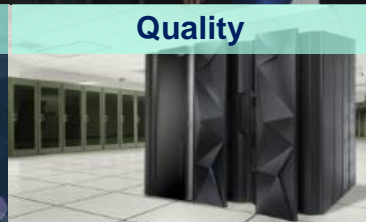
**Supply**



**Test Operation**



**Order Mgmt**



**Quality**







# Cognitive Supply Chain

IBM Watson Knowledge Studio

Completed [X]

Alpha...

**Entity**

**Type**

- PERSONNEL
- PHONE
- PLANT
- PRODUCT
- PartNumber
- SUBSTANCE
- Site
- SupplierName
- TICKER
- TIME
- TITLEWORD
- VEHICLE

**20161007 [redacted] shipments delayed**

- In order to close 3Q demand for Fan Out, and Bear Paw were scheduled direct shipments to **IBM**, and to covering potential over consuming for both cards, we sent direction to [redacted] to shipping to VMI material in SL1 mode, [redacted] confirmed quantities and SL1 mode, but per miscommunication between our customer service, and its export dept, both cards were not updated to SL1, [redacted] (carrier) picked up both cards, and scheduled air service as SL3.
- No business impact, on Monday 26th, [redacted] had notified about cards scheduled SL3 in China, after made phone calls with [redacted], and [redacted] shipments were updated from SL3 to SLX, [redacted] to VMI.

Parsed Log Sys for cell\_gda.gda1f101

Starting operation 0111 process P8LEPOPR with None regression mode at 2016-11-01 10:45:38  
 dmiw\_transfer.pl: 11.26.37 Successfully Sent DMIWT270378821C27FW~2016-11-01-11-26~GDA~828642A.xml to MFS  
 PROCESS P8LEPOPR exited with a status of FAILED, Tue Nov 1 11:26:37 2016  
 FAILED: Process=P8LEPOPR Program=iplphyp Step=A100 Tue Nov 1 11:26:37 2016  
 SRC11=BC20090F  
 SRC13=00000200

\*\*\* Commented by 781/I/054030/IBM/Magana Rangel Nahum (alugo) on 1 Nov 2016 at 11:27.  
 Normal Hardware FRU

Priority : Lowest priority replacement

Location Code : U78C9.001.WZS0UVL-P1-C25

Part Number : 00LP740

CCIN : 31E9

Serial Number : YH10M16AD02R

From rework: 2016-11-01 11:49:08 SGD10277  
 BC20090F,00LP740,2L02 E100 P1 C26, DIMM WAS ON WRONG LOCATION

**Recommended RA Actions**

System failure generated the Reference Code, **BC20090F**.  
 System failed while running the testcase **iplphyp** with a return code (RCD1) **CONS**.

SYSR12 SYSR15 SYRCD1 SYRCD4 SYPMOD SYPRLN SYSR17

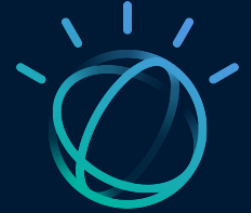
09KVE33 10CS1 AUTOV C17 C18 C20 C21 C33 DIMM DIMMS ERROR IN LOC LOCATION MEMORY  
 MODULE ON ORIGINAL P1 P8M214 PASSED PLUGGED POSITION REPLACING RESETED RETU RETURNED KIT SLOTT WAS  
**WRONG** #

**Reworked Parts Count**

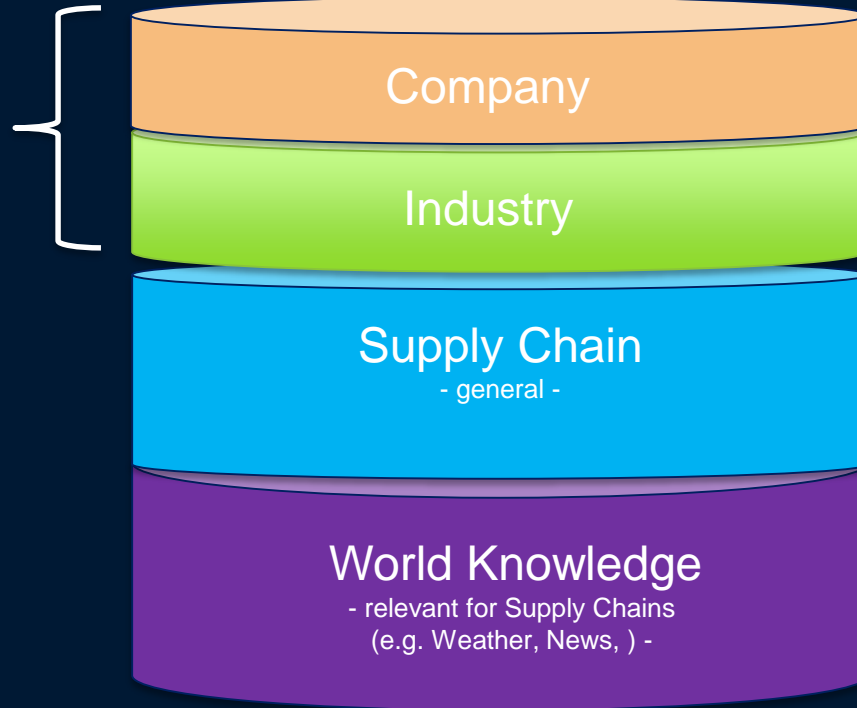
Part	Count
No part replaced	15
MODULE,P8M214 10CS1	1



# Supply Chain Advisor – Domain Corpus



accelerated  
through IBM  
Teaching  
Methods



accelerated by  
supplier & supply  
chain SMEs

accelerated by IBM  
and ecosystem  
partners

# Cognitive Supply Chain - Roadmap



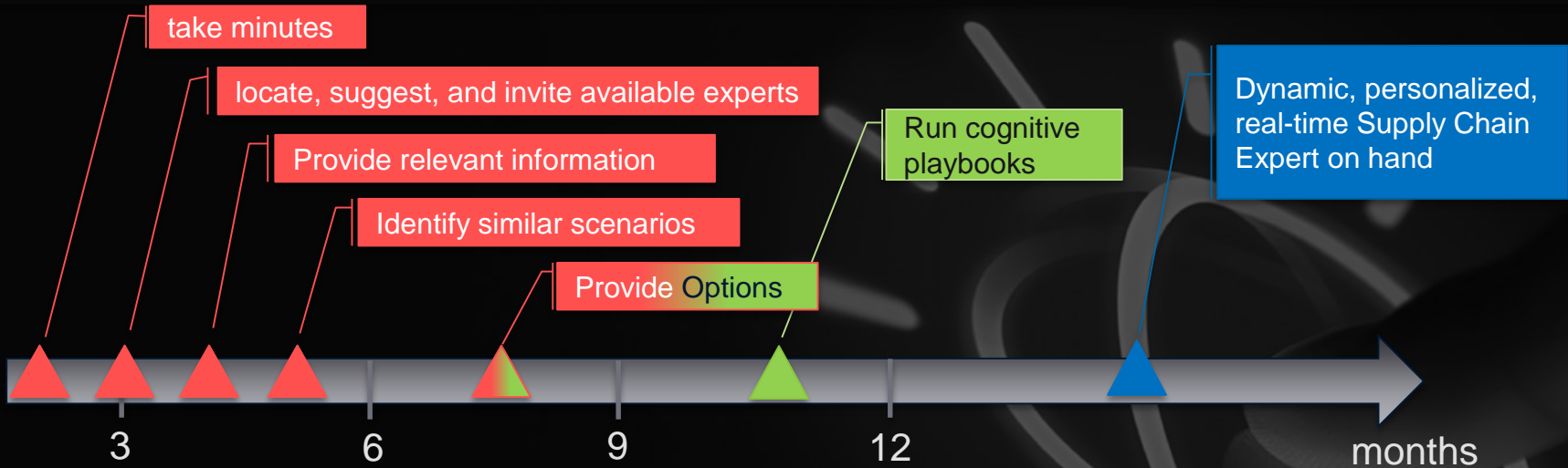
Cognitive Butler



Cognitive Moderator



Cognitive Advisor



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