



BEST PRACTICES FOR SHARING DATA ACROSS THE ENTEPRRISE

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Date | Washington, DC

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Personal introduction



David Caradonna

Director of Global Business Value Consulting Splunk> since Nov 2013

Overview

David delivers Enterprise Value Plans to C-Level executives who require assistance with business cases and data source strategies that align with strategic initiatives.

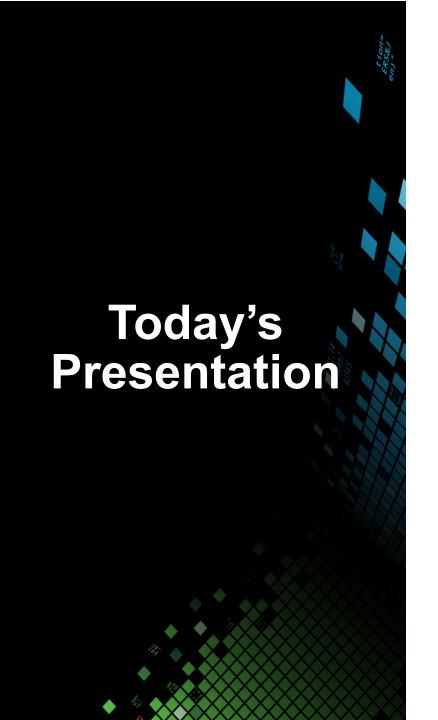
David previously ran the Value Management Office at HP Software for 6 years, and as a seasoned IT executive, David holds 25 years of IT experience in various leadership and IT life cycle functions.

25 years IT Experience;

9 years Value Consulting;

200+ Splunk Engagements;





- 1. Business Value Consulting at Splunk
- 2. Top Value Drivers
- 3. Data Source Strategy
- 4. Summary / Q&A



Business Value Consulting at Splunk

Help customers document the projected and already realized business value of making machine data accessible, usable, and valuable for everyone

Common Deliverables:

- > CFO-Ready Business Case
- > Value Realization Workshops
- > Data Source Strategies
- > Usage Maturity & Staffing Readiness
- > Enterprise Adoption Roadmaps

2000+

Engagements
Worldwide
Since 2013





Common Questions

- What data should we index?
- How can we use this data?
- What value can we realize?
- Cloud vs. On-premises?

- Can data be reused across groups?
- Who else can benefit from this data?
- Do we have the right skills to scale?









- How much value are we realizing today?
- Are we underutilizing Splunk?
- Are we indexing the right data?
- Can we get more value from our data?

- How do we compare with other customers?
- How can we plan our next adoption phase?



Key Value Drivers

As reported by Splunk Customers through 2000+ engagements worldwide

IT Operations & App Support

70-90% reduction in incident investigation time

15-45% reduction in high priority incidents

67-82% reduction in business impact

5-20% increase in infrastructure capacity utilization

Security & Compliance

70-90% faster detection and triage of security events

70-90% faster investigation of security incidents

70-90% reduction in compliance reporting time

10-50% lower risk of data breach, IP theft and fraud

Application Development

70-90% reduction in time for QA test failure analysis

70-90% reduction in time for preprod defect investigation

80-90% faster development of reports and dashboards

10-50% improvement in time to market



Key Data Sources

Documented through 2000+ engagements worldwide









Ingredients for a Successful Data Strategy

Your data

Inventory of your configured items

Available data

sources in your

environment by item

Strategic initiatives Key goals Pain points Value drivers **Data Mappings** Between groups and common data sources Between common data sources and key use cases, correlation rules, dashboards, killchain,



ITIL, CSC 20, etc...

Simple Best Practice Steps

Step 2 Create a baseline by identifying data sources within your environment Step 3 Use data maps to confirm the right data sources and potential gaps

Step 1

Identify key goals and use cases to be addressed by your data source strategy



Step 4

Design an adoption plan that maximizes data reuse across your organization





DSA – Data Source Assessment

Using a simple process that involves each team

- Pre-configured lists of most common data sources to help you document your environment
- Data dependency maps for 120+ correlations and dashboards to help you design your data plan
- Visual dashboards to assess data indexed and use case adoption and data overlap between groups
- Quickly surface areas where additional value can be realized with existing data

- Align your data with key objectives by focusing on relevant value drivers
- Identify missing data sources required to better support key objectives



Identify your Top Value Drivers

Understanding your value drivers will enable alignment with data sources



IT Ops and App Support

Application

Development

- Become more proactive
- Resolve incidents faster
- ☐ Improve root cause analysis
- ☐ Improve HW capacity utilization
- Automate routine tasks
- Reduce escalations
- Develop faster reports and dashboards
- Analyze test failures faster
- ☐ Investigate pre-production bugs faster
- ☐ Accelerate time to market
- Reduce time and effort of release

Security & Compliance

- ☐ Improve detection of security events
- ☐ Investigate security incidents faster
- ☐ Streamline compliance activities
- Reduce risk of data breach
- □ Reduce risk of IP theft
- Reduce risk of Fraud

Business Analytics

- ☐ Improve quality of business processes
- ☐ Improve efficiency of business processes
- ☐ Improve measurement of processes
- ☐ Improve audit of processes
- ☐ Improve customer experience



Document your Environment

1 section per team to achieve value drivers



Customer Service (ERP logs, custom trx logs) NO

Server	750	CONFIGURED I	TEMS		15	64 GB/day	TOTAL REQUIRED D	ATA PER DAY	35% INDEXED	54 GB/day INDEXED
Work with the server admin team to identify data source item environment.	ns required to	achieve key g	<u>coals</u> and provide an estimate for the total nu	mber of items, an approximation	on of their dail	ly log size, and	a ballpark % of da	a currently indexed by Splunk.	Add missing items as	needed to better reflect your
Configured Item	Total Items	% Indexed	Best Practice Data Source Types	% Data Source Types In	ndexed	Est. Log Size	per Item	Typical	Total Projected Data per Day	Current Total Indexed
Windows - Production Servers (physical and virtual)	350	50%	perfmon, event logs, snare, antivirus, patch	logs, etc	70%	250	MB/day per item	250 MB/day per item	85.4 GB/day	29.9 GB/day
Windows - Non Prod Servers (Dev, Test, etc)	250	50%	perfmon, event logs, snare, antivirus, patch	logs, etc	70%	150	MB/day per item	150 MB/day per item	36.6 GB/day	12.8 GB/day
Unix - Production Servers (physical and virtual)	100	50%	syslog, top, iostat, netstat, securelog, snare,	. antivirus, sar, patch logs	70%	250	MB/day per item	250 MB/day per item	24.4 GB/day	8.5 GB/day
Unix - Non Prod Servers (Dev, Test, etc)	50	50%	syslog, top, iostat, netstat, securelog, snare,	. antivirus, sar, patch logs	70%	150	MB/day per item	150 MB/day per item	7.3 GB/day	2.6 GB/day
Virtual Infrastructure Servers (ESX servers, vCenters)	-	0%	Logs from VMWare ESX servers, vCenter ser	vers	0%	250	MB/day per item	250 MB/day per item	-	-
Cloud Services - Azure	-	0%	WADLogs, WADEventLogs, WADPerformand	ceCounter, WADDiagnostInfra:	0%	250	MB/day per item	250 MB/day per item	-	-
Cloud Services - AWS	-	0%	AWS CloudTrail, CloudWatch, Config, S3, etc		0%	250	MB/day per item	250 MB/day per item	-	-
Other	-	0%			0%	-	MB/day per item		-	-
Other	-	0%			0%	-	MB/day per item		-	-
Other	-	0%			0%	-	MB/day per item		-	-
Other Logs: Could the SERVER team deliver better services if	f they had acc	ess to these lo	ogs?							
Storage (SAN, NAS, EMC, NetApp logs, etc)			Test and Dev (Non-Prod Web, App and Mida	lleware logs)	NO	_		n trx logs)		

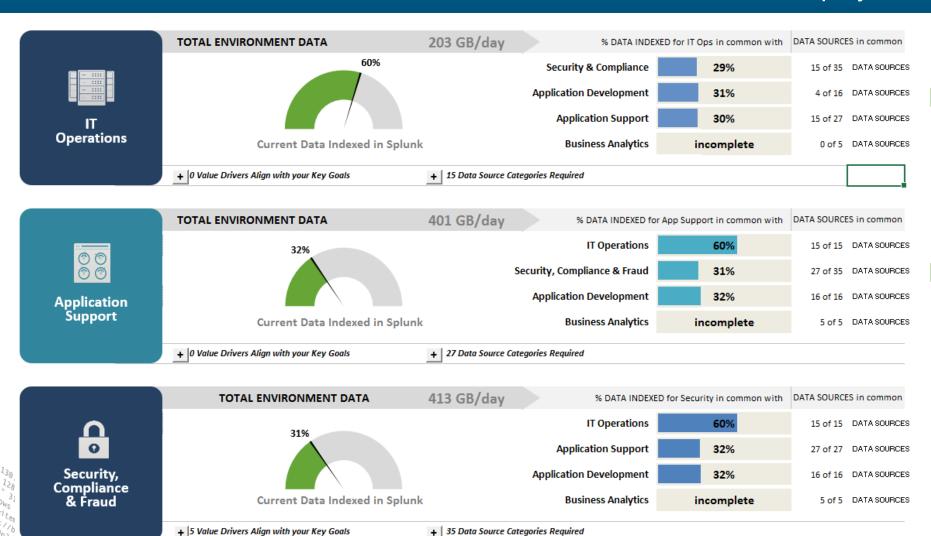
Application (Prod Web, App and Middleware logs, mobile logs)	NO	Procurement (ERP logs, custom trx logs)	<u>/</u>
End-User (Desktops, AD, Mail, Domain Controlers, etc)	NO	Product Delivery (ERP logs, custom trx logs)	
Is Splunk in use by the SERVER team to achieve the following functions for S	SERVERs currently indexed:	What type of value has the SERVER team realized from using Splunk so far?	
Proactive monitoring	YES	Reduced time to investigate incidents by	typically 70-90%
Level 1 triage of potential incidents	PARTIAL	Reduced the number of high priority incidents by	typically 15-45%
Incident investigation	NO	Reduced time for post-incident root cause analysis by	typically 70-90%
Post incident root cause analysis	NO	Reduced time for manual compliance activities by	typically 70-90%
Performance monitoring	NO	Increased in server capacity utilization by	typically 5-20%
Monitor capacity utilization of system resources	NO	Reduced time to investigate pre-prod defects by	typically 70-90%
Routine task automation like system log reviews	PARTIAL		_
Analyze pre-production issues and defects	NO		

Database (Prod and Non-Prod Oracle, SQL/Server, MySQL, RDBMS logs). . . .

Analyze your Deployment

Dashboard to Assess Current/Future Deployment





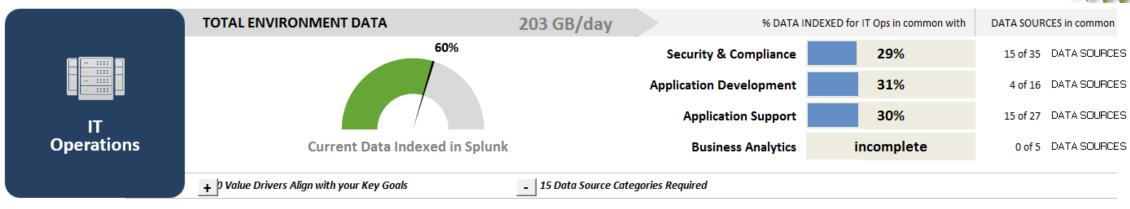
- ► Key metrics show total data required vs. actual data indexed
- between groups and data already indexed can help you plan your next adoption phase



Confirm the Right Data Sources

Visualize which Data Sources are Indexed vs. Not Indexed





Data Source Category	Items Configured Items	Data Source Types	Log Size	% Indexed	ITOps
Network	20 Switches	Ethernet and virtual switch logs, netflow data	150 MB per day per Item	50%	x
Network	30 Routers	cisco_cdr, cisco:asa, cisco_syslog, clavister, netflow, etc	250 MB per day per Item	50%	x
Network	20 Trusted FWs	Palo Alto, Cisco, Check Point, etc	250 MB per day per Item	50%	x
Network	12 DMZ FWs	Perimiter FWs	500 MB per day per Item	50%	x
Network	50 VPNs	Citrix NetScaler Nitro, Citric NetScaler IPFIX, Cisco, etc	250 MB per day per Item	50%	x
Network	40 Proxies	Bluecoat, Fortinet, Juniper:idp, Netscreen:firewall, Pan, etc	250 MB per day per Item	50%	x
Network	10 LDAP Directory Services		250 MB per day per Item	25%	x
Network	5 FTP Servers	vsftpd	250 MB per day per Item	25%	x
Network	10 DNS systems	BIND, PowerDNS, Unbound, Dnsmasq, Erl-DNS	150 MB per day per Item	25%	x
Network	2 SNMP systems	LogicMonitor, ManageEngine, Spiceworks, Ruckus Idera	100 MB per day per Item	25%	x
Network	5 DHCP	DHCP Insight, Linux DHCP	100 MB per day per Item	0%	x
Server	350 Windows - Production Servers (physical and virtual)	perfmon, event logs, snare, antivirus, patch logs, etc	250 MB per day per Item	100%	x
Server	250 Windows - Non Prod Servers (Dev, Test, etc)	perfmon, event logs, snare, antivirus, patch logs, etc	150 MB per day per Item	100%	x
Server	100 Unix - Production Servers (physical and virtual)	syslog, top, iostat, netstat, securelog, snare, antivirus, sar, patc	250 MB per day per Item	100%	x
Server	50 Unix - Non Prod Servers (Dev, Test, etc)	syslog, top, iostat, netstat, securelog, snare, antivirus, sar, patc	150 MB per day per Item	100%	x



Take an Enterprise Approach

Provide a Perspective on Current/Future Use Cases

_	SAMPL		
	SAIVIFL	ь.	
_			

Splunk FULLY in use

Splunk PARTIALLY in use

Splunk NOT IN USE however >20% data is ALREADY INDEXE

O Splunk NOT IN USE but can deliver value with NEW data

TOTAL DATA PER DAY	1,469 GBs	42%		n	T Operation	ns & Applica	ation Suppo	rt		Secu	ı <mark>rity, Co</mark> r	mpliance an	d Fraud	Applic	ation Deve	elopment		Ві	ısiness Ser	vices	
Groups	Required Data / Day	% of Data Indexed	Proactive Monitoring	Level 1 Triage	Incident Response	Root Cause Analysis	Performance Monitoring	Capacity Mgmt	Routine Task Automation	Event Detection	SOC Triage	Deep Dive Investigation	Compliance Monitoring & Reporting	Report & Dashboard Development	QA Test Failure Analysis	Defect Remediation, Debugging Code	Business Service Efficiency	Business Service Quality	Business Service Speed	Business Service Measurement	Business Service Audit
Server Admin	304 GBs	36%	•																		
Storage Admin	289 GBs	38%																			
Network Admin	59 GBs	69%	•	•	0																
Database Admin	1,036 GBs	45%	0		0	0	0		•												
Application Support	754 GBs	47%																			
End-User Support	136 GBs	0%	0	0	0	0	0		0												
Security Engineers	1,191 GBs	41%								0	0	0									
Fraud Team	563 GBs	48%																			
Testers and Developers	1,036 GBs	45%												•							
Order Mgmt	98 GBs	50%																			
Billing & Invoicing	20 GBs	0%	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0
Customer Service	124 GBs	39%														1					
Procurement	1 GBs	0%	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0
Product Delivery	2 GBs	0%	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0



Take an Enterprise Approach

Provide a Perspective on Current/Future Use Cases

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CAMDIE	-
SAMPLE	-
	-
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			•	Splunk Fl	ULLY in use	C	Splunk PAF	RTIALLY in u	ıse		Splunk	NOT IN USE	however >20%	6 data is ALRE	ADY INDEX	E 0) Splunk N (OT IN USE bu	ut can delive	er value with N	NEW data
TOTAL DATA PER DAY	1,469 GBs	42%		ı	T Operation	ns & Applic	ation Suppo	rt		Secu	urity, Co	mpliance an	d Fraud	Applio	cation Dev	elopment		В	usiness Ser	vices	
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Server Admin	304 GBs	36%	•	+	+	+	+	+	+						+	+					
Storage Admin	289 GBs	38%	+	+	+	+	+	+	+												
Network Admin	59 GBs	69%	•	•	0	+	+		+												
Database Admin	1,036 GBs	45%	0	+	0	0	0	+	•						+	+					
Application Support	754 GBs	47%	+	+	+	+	+	+	+					+	+	+					
End-User Support	136 GBs	0%	0	0	0	0	0		0												
Security Engineers	1,191 GBs	41%							+	0	0	0	+		+						
Fraud Team	563 GBs	48%								+	+	+	+								+
Testers and Developers	1,036 GBs	45%												•	+	+					
Order Mgmt	98 GBs	50%	+	+	+	+	+	+	+					+	+	+	+	+	+	+	+
Billing & Invoicing	20 GBs	0%	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0
Customer Service	124 GBs	39%	+	+	+	+	+	+	+					+	+	+	+	+	+	+	+
Procurement	1 GBs	0%	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0
Product Delivery	2 GBs	096	0	0	0	0	0	0	0					0	0	0	0	0	0	0	0



Assess your Current Data Maturity

Visualize your current state compared to other Splunk Customers



52 Security Correlations possible with <u>current data</u>, indexing an average of **50%** of commonly required data sources

Security Use Cases	% Data Indexed
Abnormally High Number of Endpoint Changes By User	41%
Account Deleted	41%
Activity from Expired User Identity	38%
Anomalous Audit Trail Activity Detected	41%
Anomalous New Listening Port	52%
Anomalous New Process	52%
Anomalous New Service	52%
Asset Ownership Unspecified	38%
Brute Force Access Behavior Detected	30%
Brute Force Access Behavior Detected Over One Day	30%
Cleartext Password At Rest Detected	30%
Completely Inactive Account	30%
Concurrent Login Attempts Detected	30%
Default Account Activity Detected	34%
Default Account At Rest Detected	38%
Excessive DNS Failures	50%
Excessive DNS Queries	50%
Excessive Failed Logins	30%
Expected Host Not Reporting	30%
Geographically Improbable Access Detected	30%
High Number of Hosts Not Updating Malware Signatures	56%
High Number Of Infected Hosts	56%
High Or Critical Priority Host With Malware Detected	47%
High or Critical Priority Individual Logging into Infected Machine	41%

Security Use Cases	% Data Indexed
High Process Count	52%
High Volume Email Activity to Non-corporate Domains by User	44%
High Volume of Traffic from High or Critical Host Observed	24%
Host Sending Excessive Email	50%
Host With A Recurring Malware Infection	56%
Host With High Number Of Listening ports	52%
Host With High Number Of Services	52%
Host With Multiple Infections	56%
Host With Old Infection Or Potential Re-Infection	56%
Inactive Account Activity Detected	34%
Insecure Or Cleartext Authentication Detected	30%
Multiple Primary Functions Detected	52%
Network Change Detected	41%
Network Device Rebooted	41%
New User Account Created On Multiple Hosts	41%
Outbreak Detected	56%
Same Error On Many Servers Detected	46%
Short-lived Account Detected	39%
Should Timesync Host Not Syncing	43%
Substantial Increase In Events	75%
Substantial Increase In Port Activity	43%
Threat Activity Detected	100%
Unapproved Port Activity Detected	26%
Unroutable Host Activity	43%
Unusual Volume of Network Activity	43%
Vulnerability Scanner Detected (by events)	75%
Vulnerability Scanner Detected (by targets)	75%
Web Uploads to Non-corporate Sites by Users	24%



Verify your Planned Data

Compare your data strategy against other Splunk customers



based on the machine data available in our environment, 62 Security correlations will have an average of ~80% of commonly required data sources

Security Use Cases	% Data Indexed
Abnormally High Number of Endpoint Changes By User	79%
Abnormally High Number of HTTP Method Events By Src	30%
Account Deleted	79%
Activity from Expired User Identity	69%
Anomalous Audit Trail Activity Detected	79%
Anomalous New Listening Port	89%
Anomalous New Process	89%
Anomalous New Service	89%
Asset Ownership Unspecified	69%
Brute Force Access Behavior Detected	62%
Brute Force Access Behavior Detected Over One Day	62%
Cleartext Password At Rest Detected	62%
Completely Inactive Account	62%
Concurrent Login Attempts Detected	62%
Default Account Activity Detected	66%
Default Account At Rest Detected	69%
Excessive DNS Failures	100%
Excessive DNS Queries	100%
Excessive Failed Logins	62%
Excessive HTTP Failure Responses	30%
Expected Host Not Reporting	62%
Geographically Improbable Access Detected	62%
High Number of Hosts Not Updating Malware Signatures	88%
High Number Of Infected Hosts	88%
High Or Critical Priority Host With Malware Detected	78%
High or Critical Priority Individual Logging into Infected Machine	73%
High Process Count	89%
High Volume Email Activity to Non-corporate Domains by User	85%
High Volume of Traffic from High or Critical Host Observed	50%
Host Sending Excessive Email	100%

Security Use Cases	% Data Indexed
Host With A Recurring Malware Infection	88%
Host With High Number Of Listening ports	89%
Host With High Number Of Services	89%
Host With Multiple Infections	88%
Host With Old Infection Or Potential Re-Infection	88%
Inactive Account Activity Detected	66%
Insecure Or Cleartext Authentication Detected	62%
Multiple Primary Functions Detected	89%
Network Change Detected	79%
Network Device Rebooted	79%
New User Account Created On Multiple Hosts	79%
Outbreak Detected	88%
Potential Gap in Data	100%
Prohibited Process Detected	100%
Prohibited Service Detected	100%
Same Error On Many Servers Detected	90%
Short-lived Account Detected	74%
Should Timesync Host Not Syncing	85%
Substantial Increase In Events	100%
Substantial Increase In Port Activity	100%
Threat Activity Detected	100%
UEBA Threat Detected	100%
UEBA Threat Detected (Risk)	100%
Unapproved Port Activity Detected	94%
Unroutable Host Activity	100%
Untriaged Notable Events	100%
Unusual Volume of Network Activity	100%
Vulnerability Scanner Detected (by events)	100%
Vulnerability Scanner Detected (by targets)	100%
Watchlisted Event Observed	100%
Web Uploads to Non-corporate Sites by Users	50%





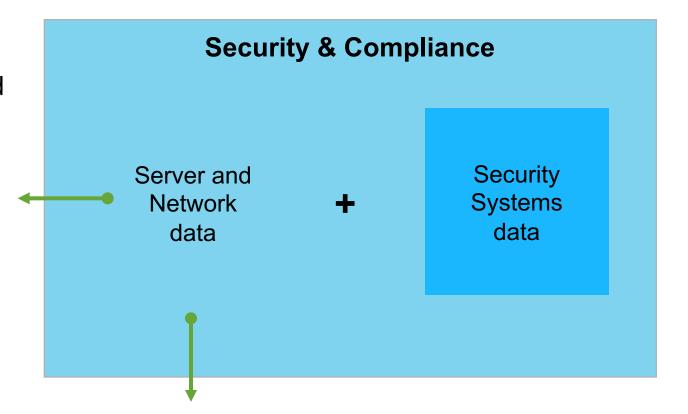
Consider Data Reuse to Plan your Next Adoption

On average 80%

of the data required for Security & Compliance is

CRITICAL for IT OPS to achieve full

value with infrastructure teams



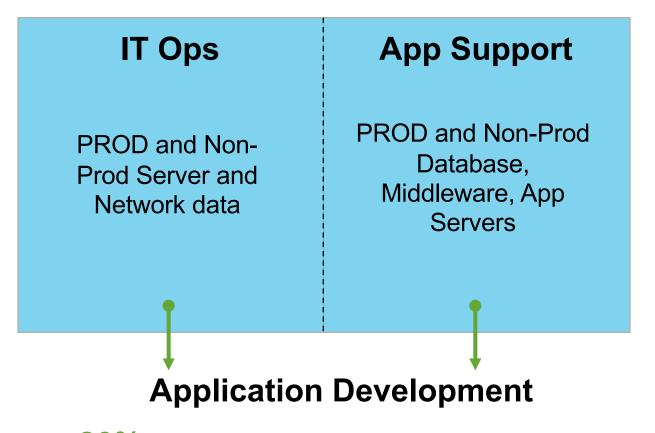


Data Reuse =
Faster Results +
Higher Value per
GB indexed

On average, 80% of the data required for Security & Compliance is of **HIGH** value for **Application Support teams** to enable End to End visibility once Database, Middleware and Application data is indexed



Reusing IT Ops and App Support Data





Data Reuse =
Faster Results +
Higher Value per
GB indexed

On average, >80% of the data required for IT Ops and Application Support also

ENABLES Application Delivery teams to produce faster release cycles with less errors



Data Reuse Typically Enables Broader Key Goals

Continuously Secure the Environment

Better detection of cyber attacks

Faster response to security incidents

Continuous compliance monitoring

Reduction in risk for data breach, fraud and IP theft

Reduce and/or Avoid IT Expenditures

Infrastructure cost avoidance through improved capacity management

Future headcount avoidance

Tools consolidation

Improve Internal Efficiencies

Labor savings with common IT processes

Faster incident investigation and root cause analysis

Proactive automation of key business processes

Better visibility & reporting

Increase Revenue

Avoid revenue impact from fewer critical outages

Faster delivery of real-time business analytics

Improved innovation value for key business initiatives

Accelerate Time to Market

Faster test failure analysis

Faster remediation of bugs and defects

Fewer developer disruptions

Faster, more robust code deployments

Improve Business Services

Minimize business disruptions

Improved & more consistent SLA's

More reliable business services leads to better brand

Faster response to customer requirements





- 1. Align with key initiatives/programs
- 2. Leverage common data source maps
- 3. Surface new use cases possible with current data
- 4. Identify missing data to drive better content and new use cases
- 5. Factor **data reuse** to plan your next adoption phase



What's Next

Common Questions...

- Can you assist me with a data source assessment?
- Will I get a copy of the DSA tools?
- Can I get a copy of this Presentation?

YES

Come see us at the "Business Value Consulting" booth, or work with your Splunk account team





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