

John Lewis – A Journey to Awesome

How Difficult Became Easy with Splunk & ITSI

Paul Adams, Splunk Engineer

09/27/2017 | Washington, DC

Q: Who is John Lewis?



John Lewis Really Is Different!



It is a Partnership
Owned By Employees
Making them Happy and Driven
To Give Great Customer Service

Great Staff ...

"Now Where Are They On This Website?"

John Lewis

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Home Furnishings

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[Blinds](#)

[Curtains](#)

[Curtain Poles, Tracks & Accessories](#)

[Cushions, Bean Bags & Throws](#)

[Fabrics](#)

[Wallpaper](#)

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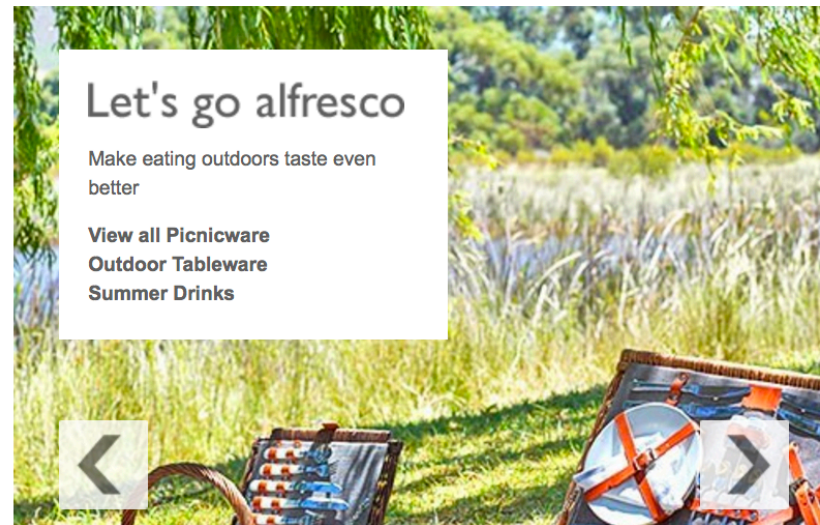
Home Accessories

[Lighting](#)

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Home & Garden



Let's go alfresco

Make eating outdoors taste even better

[View all Picnicware](#)
[Outdoor Tableware](#)
[Summer Drinks](#)



BBQs



Cooking & Baking



Bedding



Upside was Low



Downside was Low



Change Happened Slowly

Not Man...

2004

Issues were
Reproducible

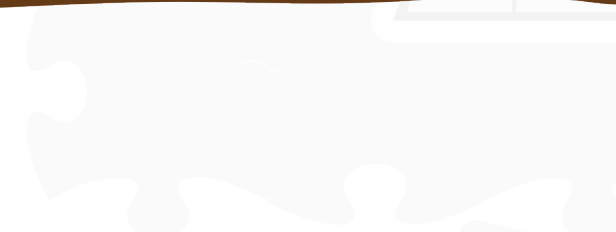


Feedback
was

About Human

... By Humans

If All Else Failed ...



John Lewis

2012





So What's It Like Working Like This?

BUT THEN

On a Sunny Day It Looks Like This

Best of Breed Monitoring

John Lewis

splunk> 2017

It Breaks Down Just When You Need It The Most

Best of Breed
Monitoring

OWNERSHIP SPAGHETTI
SEMANTIC SPAGHETTI

A L E R T S T O R M

UNCONSOLIDATED
UNDERFIRING
FRAGMENTED
CONTEXTLESS

Operational
Personnel

HUMAN LATENCY
HUMAN RELIANCE
HUMAN ERROR
HUMAN INCONSISTENCY

T I C K E T S T O R M

ORPHANS
TICKET BLOAT
TIME DELAYED
DUPLICATED
UNCORRELATED

Ticketing
System

SILOED RESPONSE
CONFUSION
DUPLICATED EFFORT

REACT!!?
REACT!!?
REACT!!?

CONTEXT BLINDNESS
OVERLOADED
DUPLICATED EFFORT
IMPACT BLINDNESS
PRIORITY CONFUSION
BUCK PASSING
FOCUS CHURN

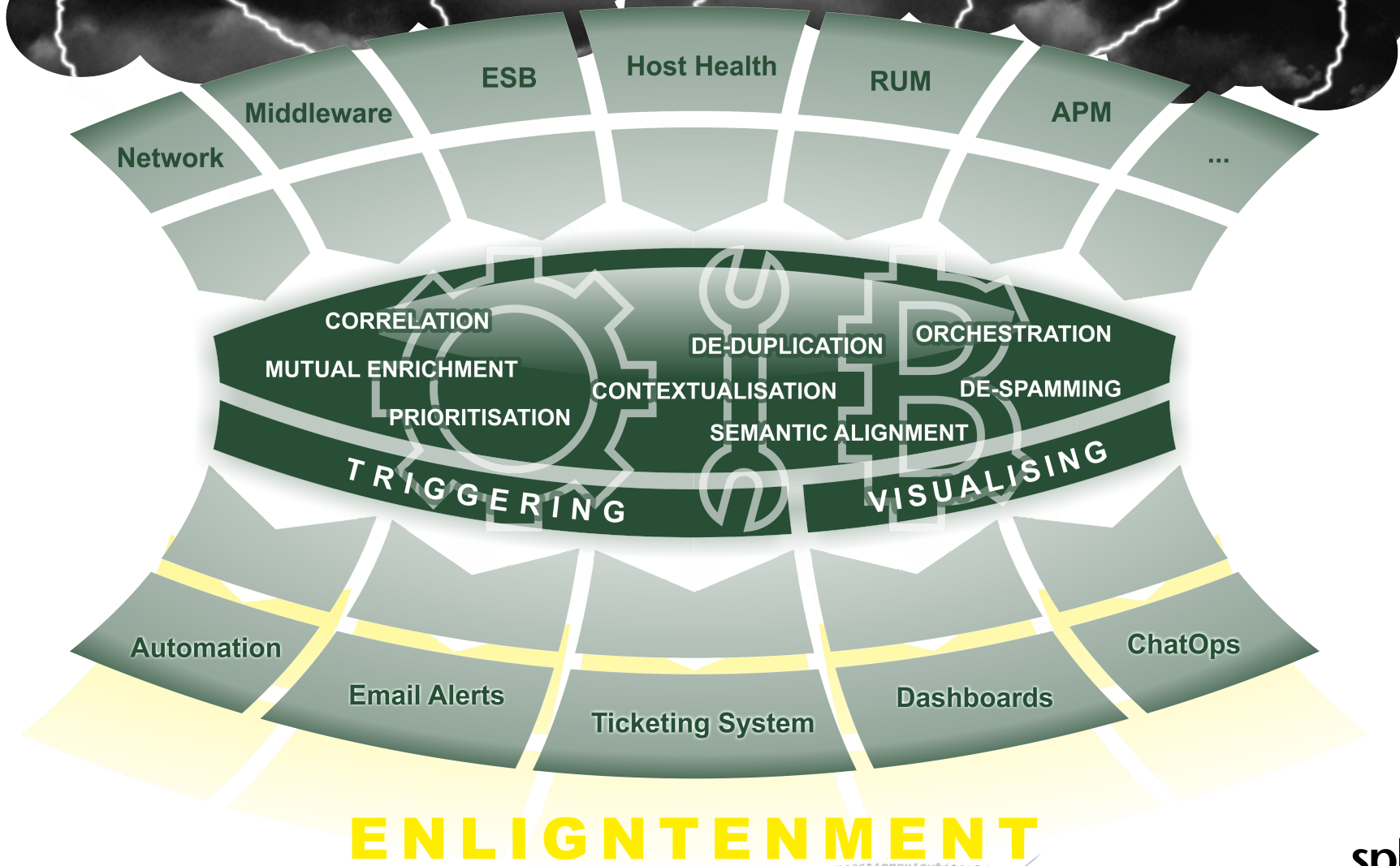
↑ DELAY COST
↓ QUALITY

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splunk> .conf2017



Let's Turn That Noise Into a Valuable Signal



John Lewis

MANY SYSTEMS

ONE VIEW OVER THE DATA

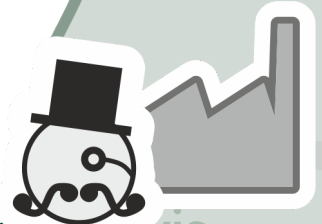
Now, What Does That Look Like?

And That Includes A View on Users

Keep Your Microscopes

BU^T GET A MACROSCOPE!

ME



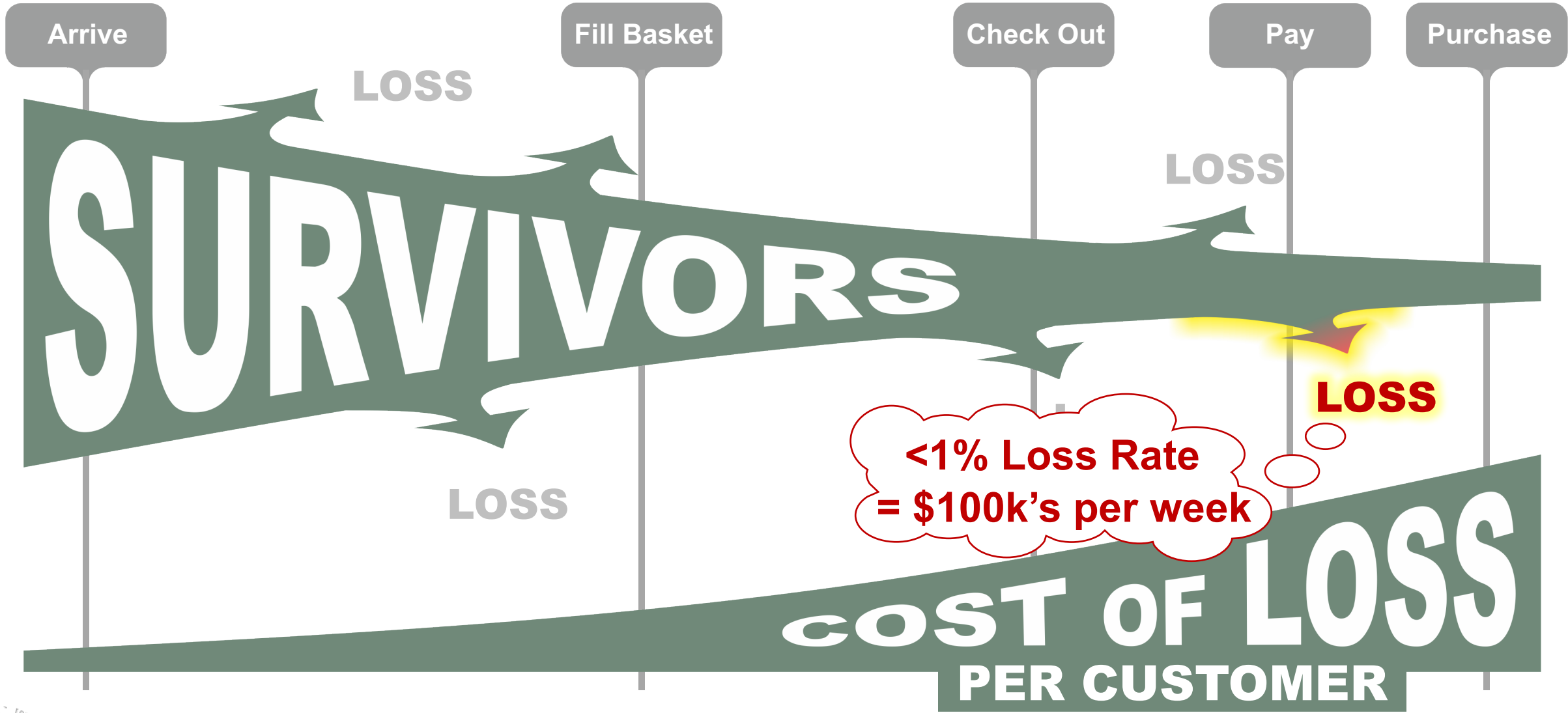
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So How *Actually* Did We Get Started at John Lewis?

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Where Were We Losing Customers?



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Actually We Had *No Choice* But To Use Splunk

2004 Era Tactics Didn't Work!



Speculative Restarts & Reconfigures a no-go

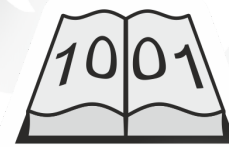


Issue Not Reproducible



Steps Vaguely Described

... And To Make Things Worse



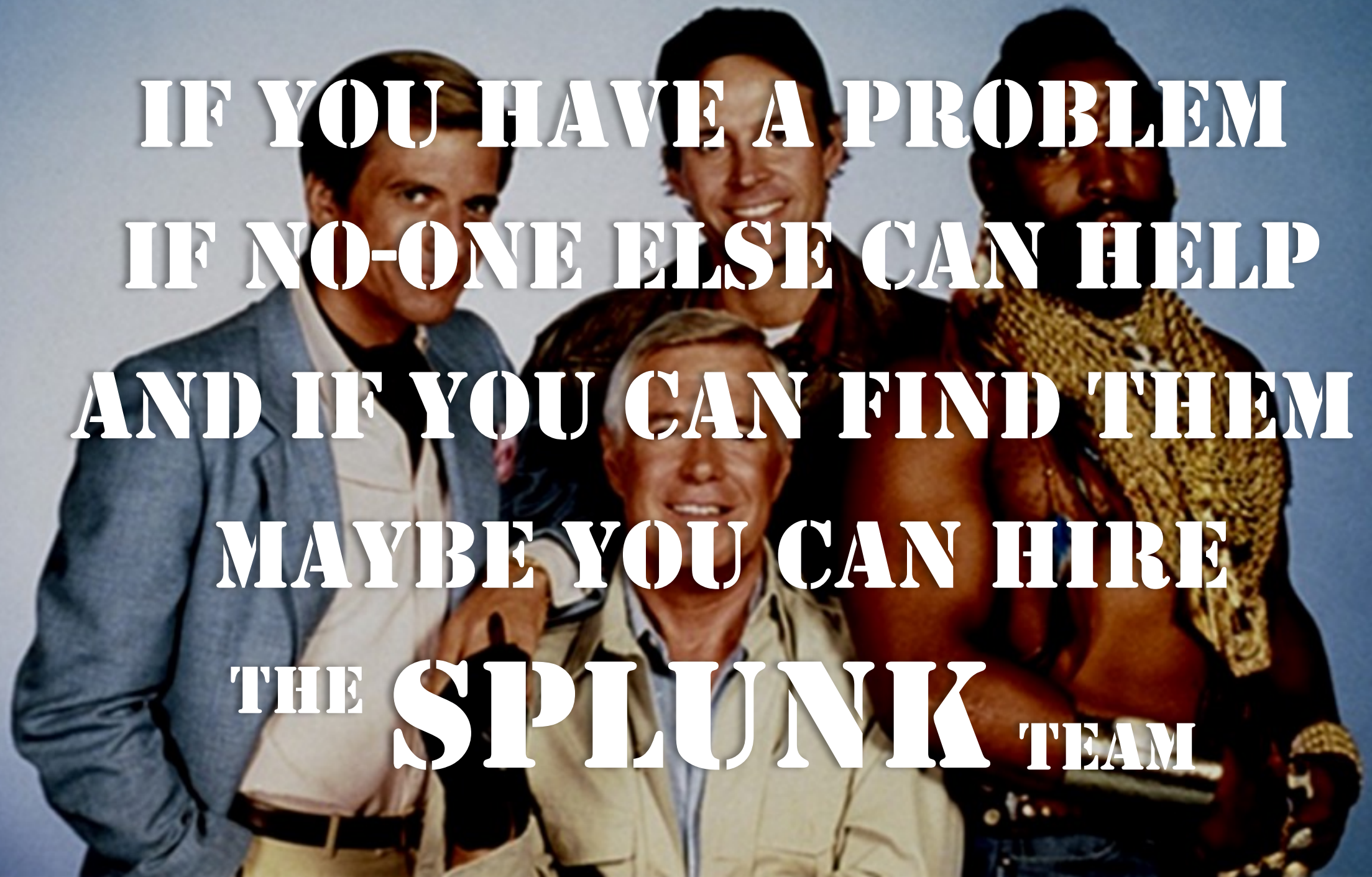
No Server-Side Error Signatures



SaaS Component Involved

Maybe Just Ignore It?

Er, No!
Far too much at stake!



IF YOU HAVE A PROBLEM

IF NO-ONE ELSE CAN HELP

AND IF YOU CAN FIND THEM

MAYBE YOU CAN HIRE

THE SPLIT TEAM

A man in a grey shirt and black gloves is shown in profile, holding a lit cigarette. He has a serious expression. The background is a large, intense explosion with bright orange and yellow flames. The overall scene is dramatic and high-contrast.

REPRODUCIBILITY

EXPLODING THE MYTH



There's No Such Thing As
"It's Not Reproducible"

ONLY

~~"I don't know *HOW* to Reproduce"~~

But Analytics Changed The Game For Us!

John Lewis

Factors

Entire Population

Dropout Rate

During Checkout

Why?

A Particular Release



A Particular User Device



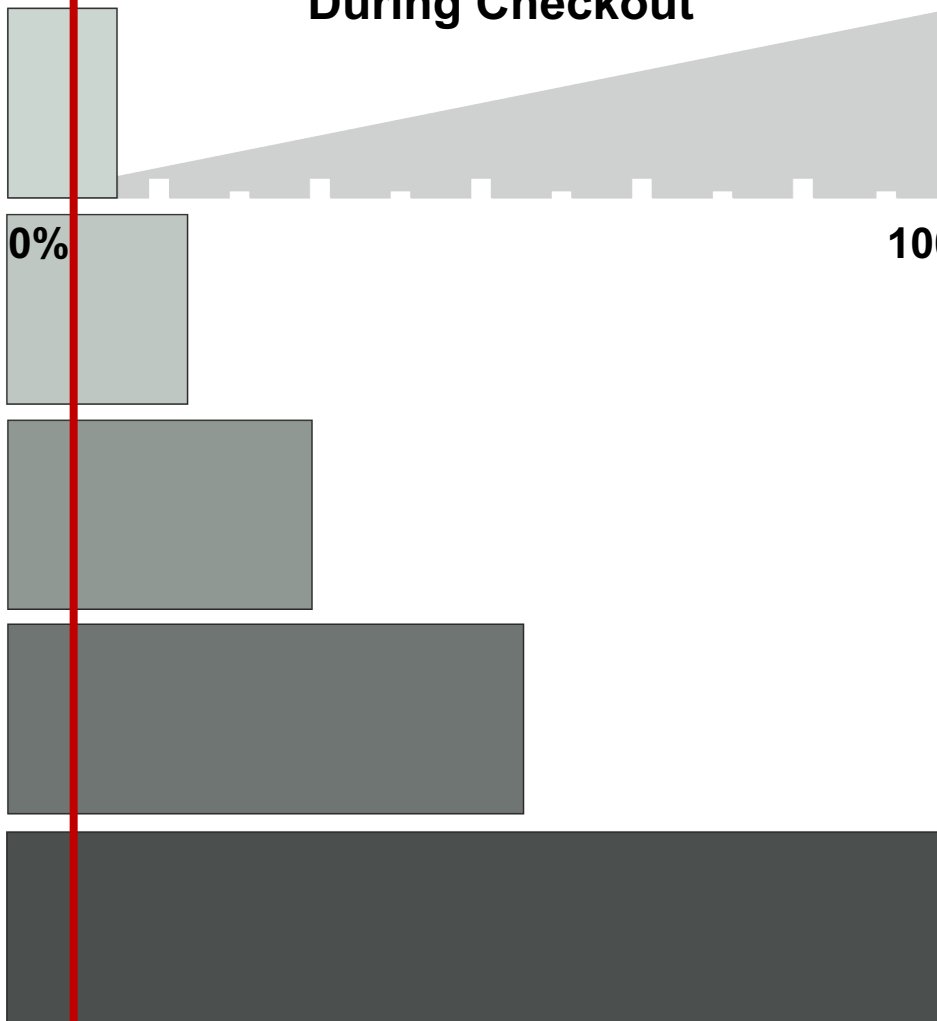
Running a Particular OS



With a Particular Browser Version



Using a Particular Credit Card



“Exotic” JavaScript On Cloud Hosted Payment Page

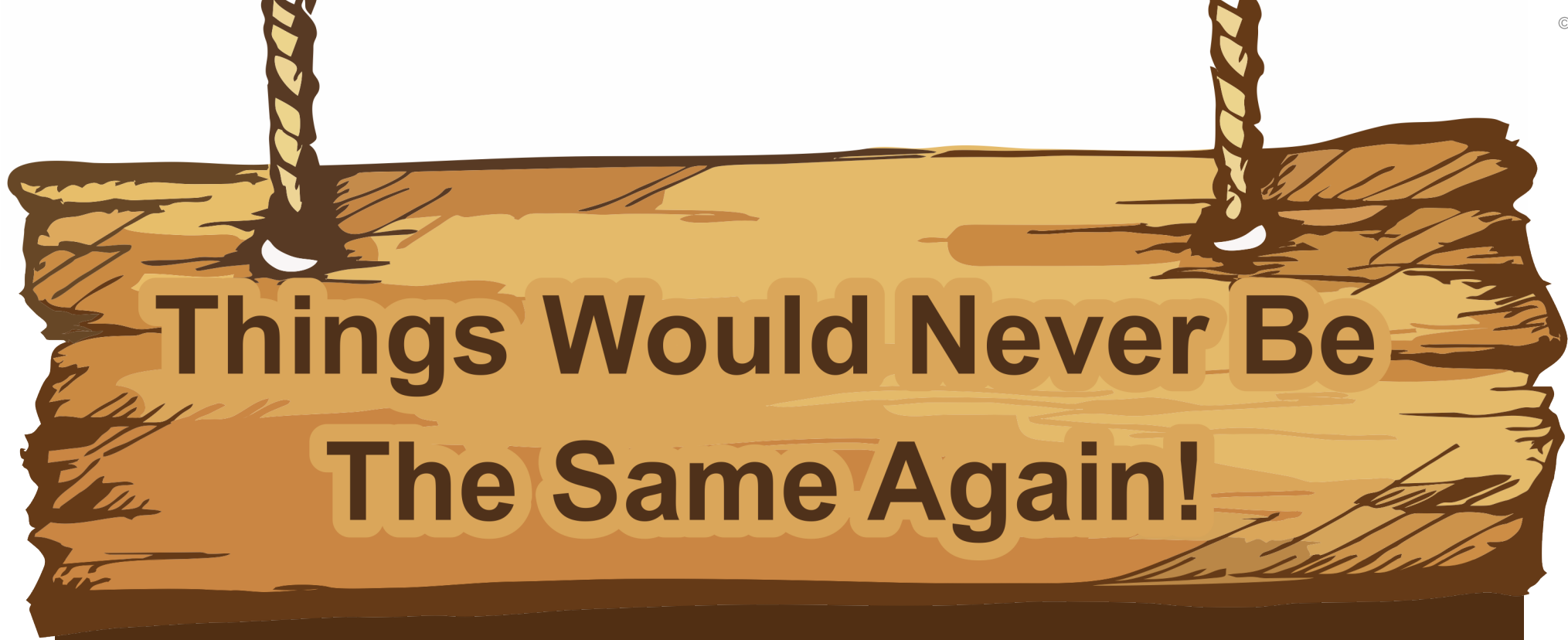
+

Intolerance of “Exotic JS”

+

Exotic Cloud Payment Page Comes Into Play

So 5 Ingredients Needed to Reproduce This Problem!



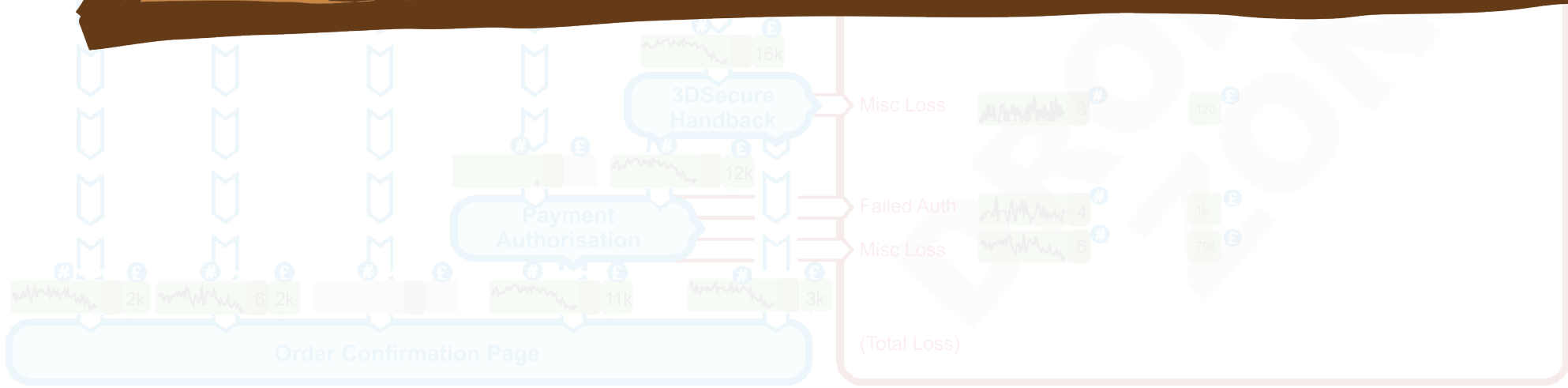
~~“It’s not OK to Spend All Day Looking at Charts”~~

Analytics Changed The Mindset !

130.60.4
128.241.27
317.27.1
itemId=ES
NET CLR 1.1.4322) 468 125.17 14
/category.screen?category_id=GIFTS&JSESSIONID=SD5SL9FF1ADFF3 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FI-5W-03"
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Stage Two: Let's Be Bold!



REPRESENTATION ONLY - NOT REAL DATA

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```

130.60.4
128.241.27
ows NT 27.1
itemid=ES
http://buttercup-shopping.com/cart.do?action=purchase&product_id=RP-LI-02" 468 125.17 14
http://buttercup-shopping.com/category.screen?category_id=GIFTS&JSESSIONID=SD5SLAFF10ADFF10 HTTP 1.1" 404 322
http://buttercup-shopping.com/category.screen?category_id=FLOWERS&JSESSIONID=SD5SL9FF1ADFF3 HTTP 1.1" 200 1318
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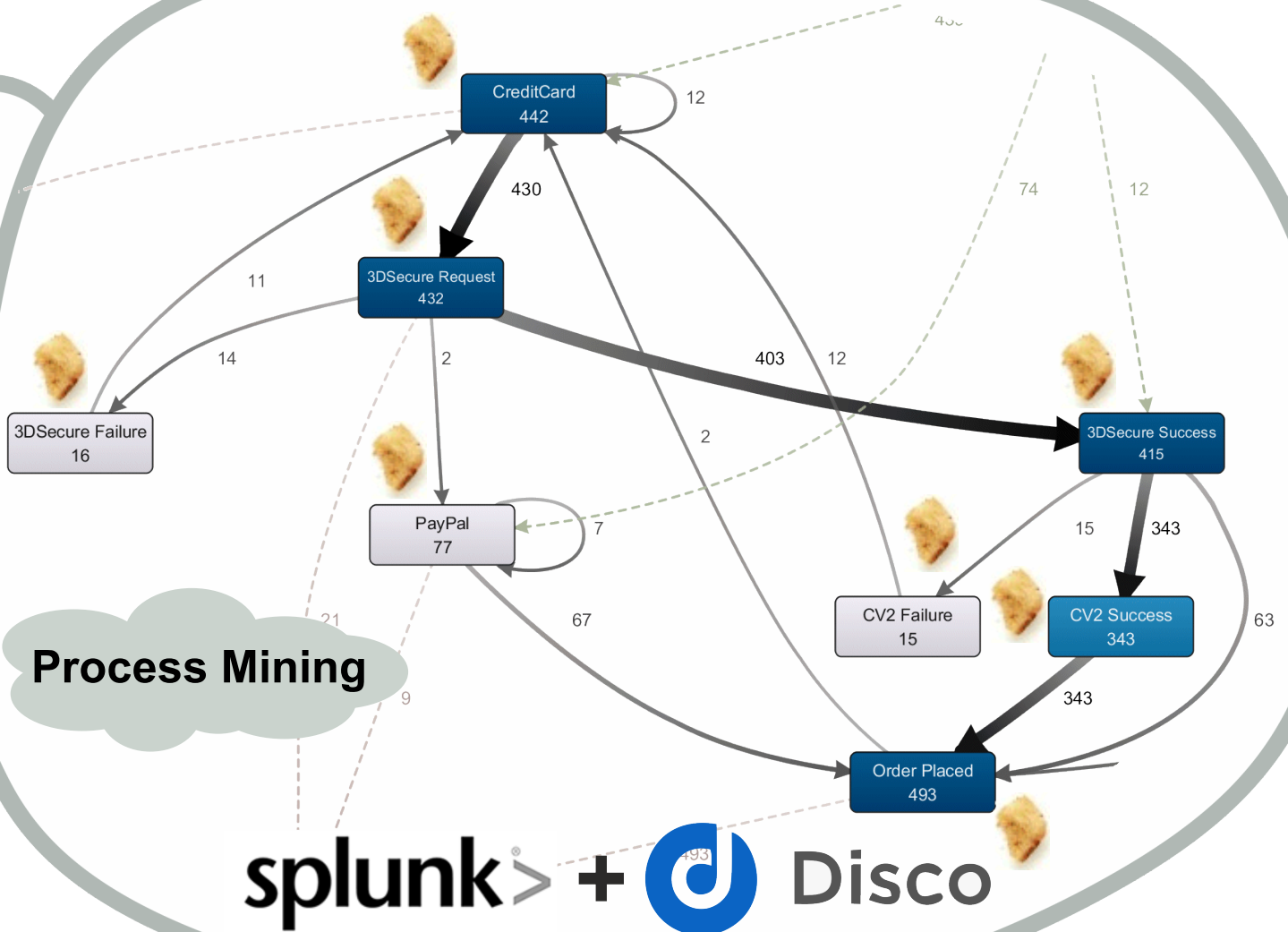
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So What Work Went Into This?

Characterise The Data



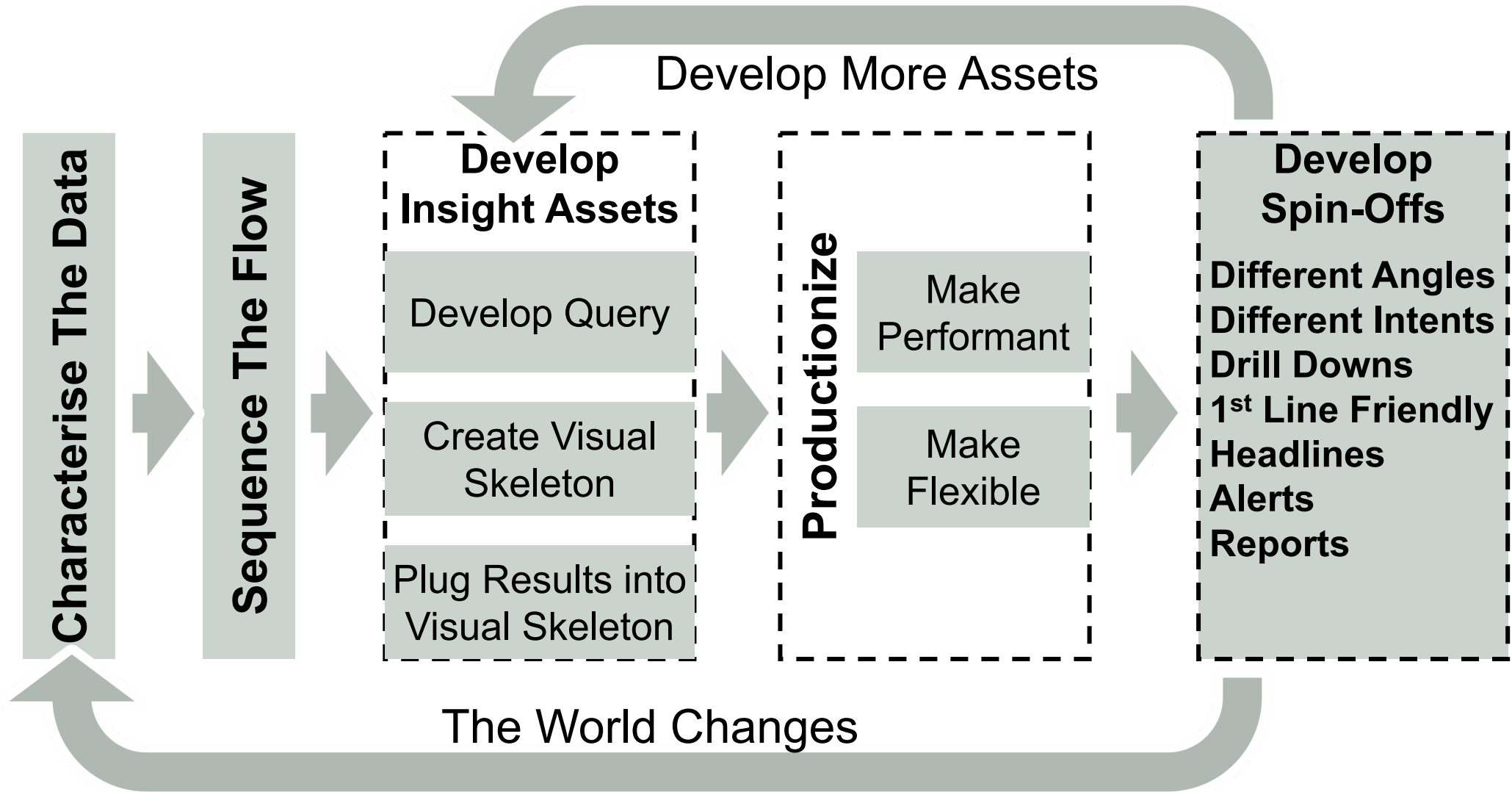
Sequence The Flow



splunk > + Disco

John
130.60.4...
128.241.27...
317.27...
ows NT 5.1...
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So What Work Went Into This?



130.60.4
128.241.27
ows NT 5.1
itemId=ES
/buttercup-
action=purch
shopping.com

John Lewis

We All Want to Produce Things That Are


FLEXIBLE


QUICK to DEV


MAINTAINABLE


PERFORMANT


SKILLS - LIGHT

Flexible
Quick to Dev
Maintainable
Performant
Skills – Light

John Lewis

Reality: The See-Saw of Doom!

BAD



Flexible
Quick to Dev
Maintainable
Performant
Skills – Light



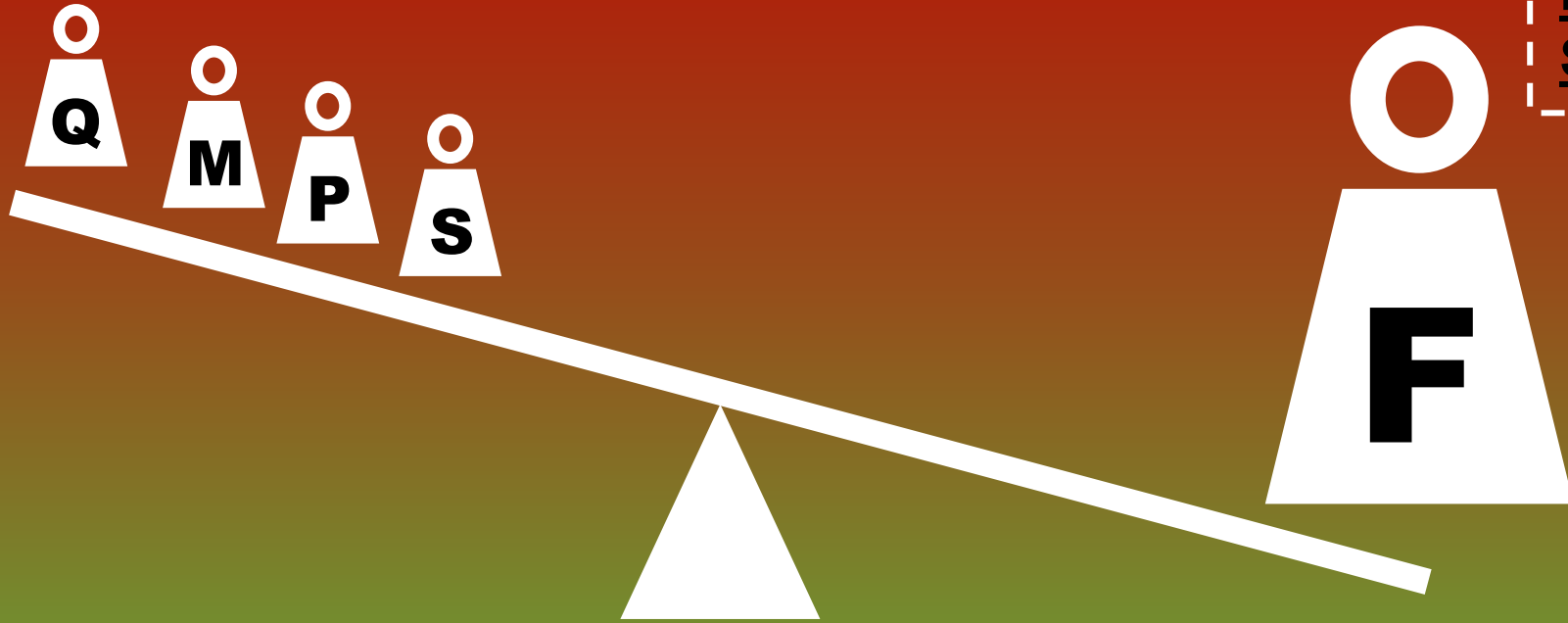
GOOD

John Lewis

Reality: The See-Saw of Doom!

BAD

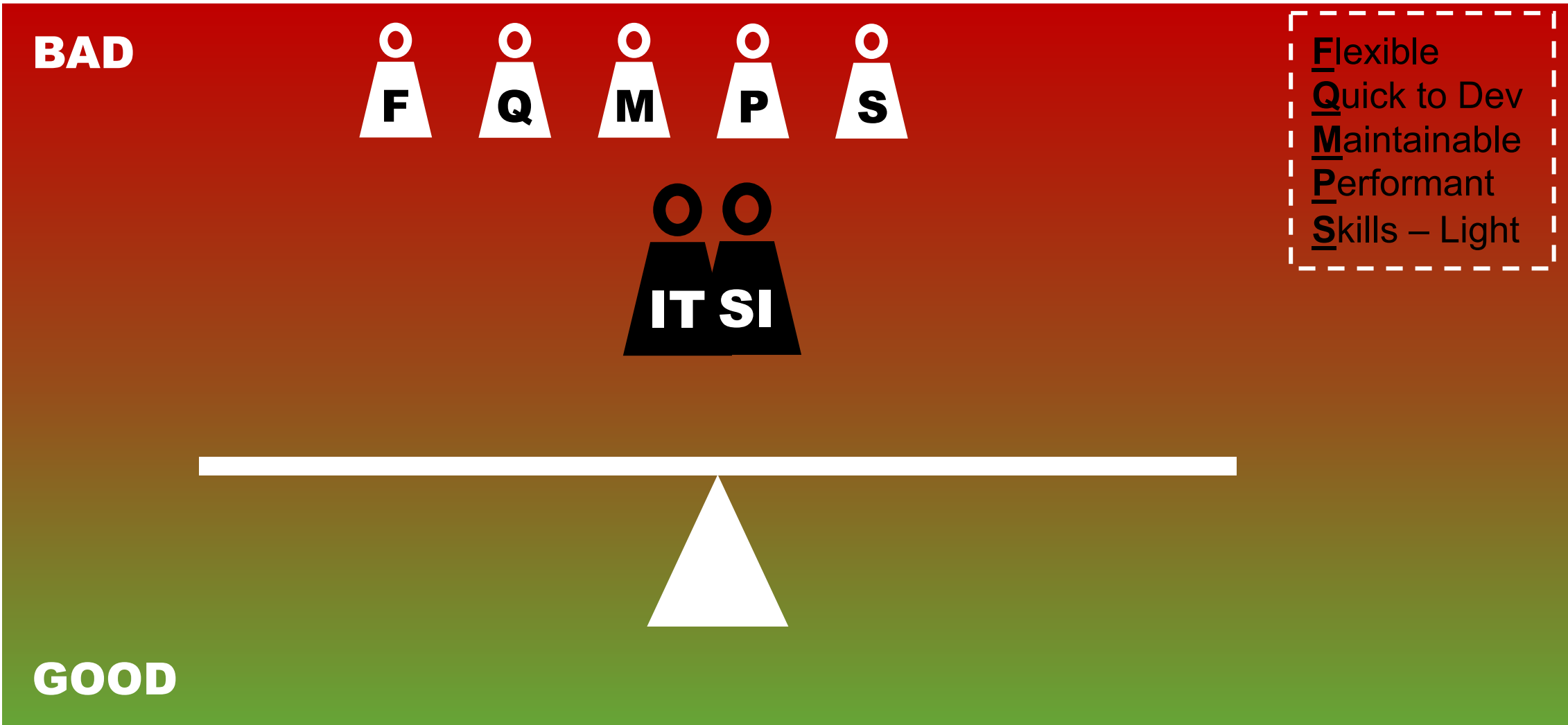
Flexible
Quick to Dev
Maintainable
Performant
Skills – Light



GOOD

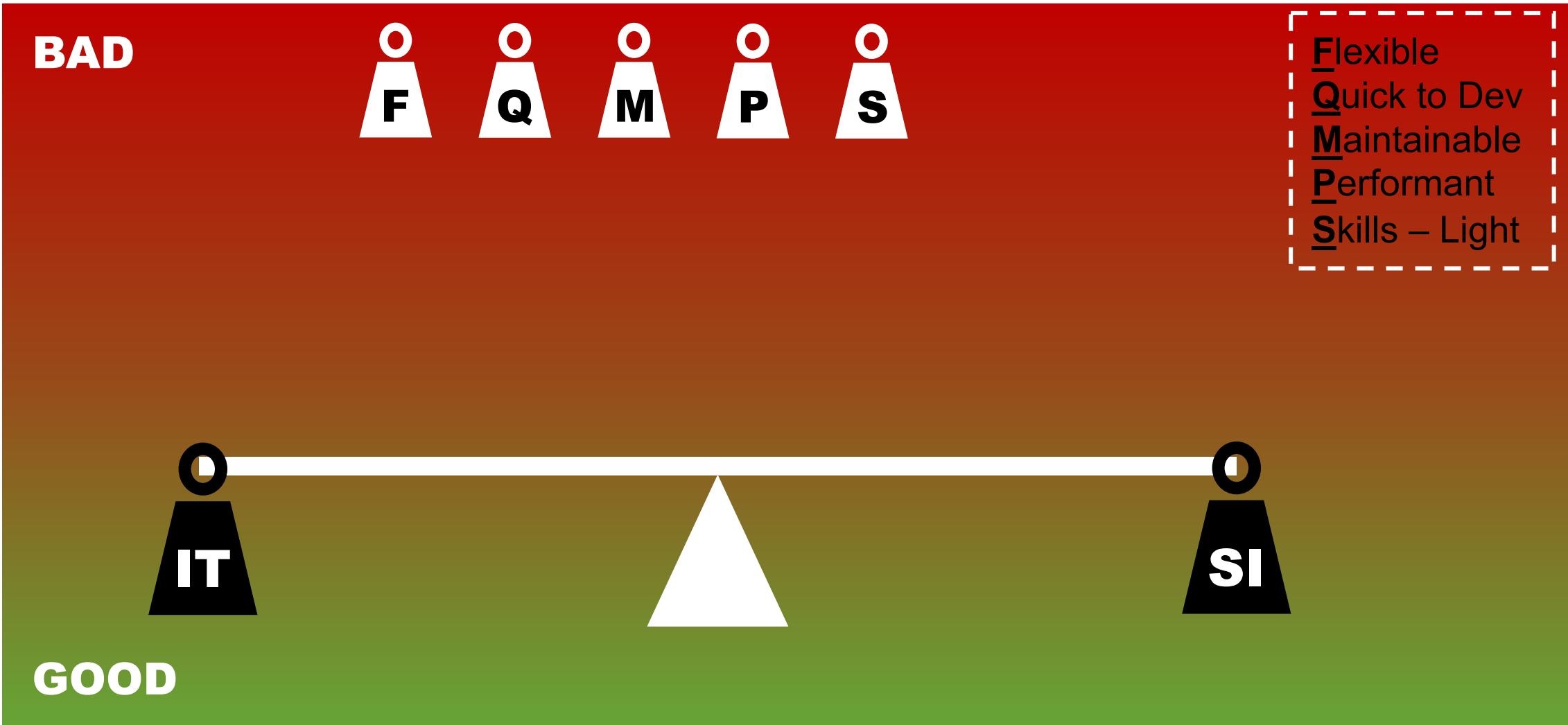
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But With ITSI – We “Could Almost Have It All”



John Lewis

But With ITSI – We “Could Almost Have It All”



How ITSI Did That For John Lewis

- Flexible
- Quick to Dev
- Maintainable
- Performant
- Skills – Light



John Lewis



Checkout Board

2014: Attempt One



Dev

Available

Performant

Skills – Light

John Lewis

130.60.4... [07...
128.241.27...
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://buttec...&product_id=RP-LI-02"
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1.1.4322) "GET /oldlink?item_id=EST-26&JSESSIONID=5D55L9FF1ADFF3 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=changequantity&itemId=EST-18&product_id=AV-CB-01&JSESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 200 3855 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=KQ-CW-01"
189) "GET /category.screen?category_id=FLOWERS&JSESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 200 3855 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=KQ-CW-01"
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189) "GET /category.screen?category_id=FLOWERS&JSESSIONID=5D55L7FF6ADFF0 HTTP 1.1" 200 3855 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=KQ-CW-01"

2014: Attempt One



Results

31.2	7.3	
45.3	43	
78.1	3.4	
67.6	5.4	
54.3	6.3	



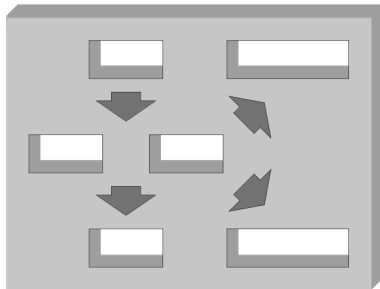
Dashboard

django



{CSS}

Visual Skeleton



Drawing Package



John Lewis

Flexible



Quick to Dev



Maintainable



Performant



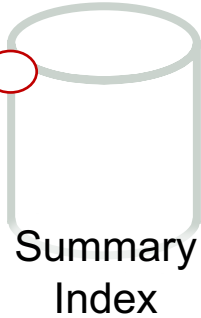
Skills – Light



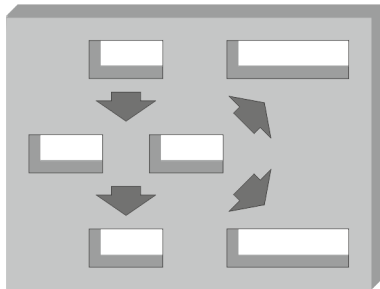
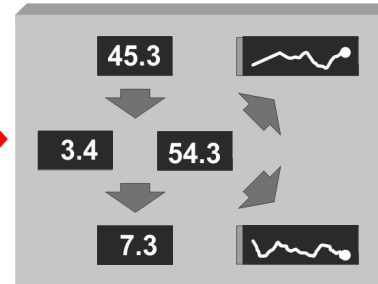
2014: Attempt One



31.2		
	43	
78.1		
67.6	5.4	
	6.3	



Dashboard



Flexible



Quick to Dev



Maintainable



Performant



Skills – Light



Inflexibility

Effort Burden

Maintenance Burden

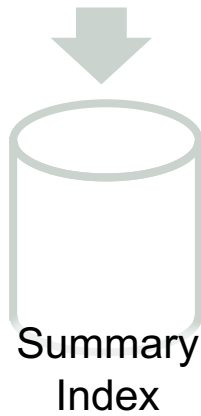
Skills Burden

John Lewis

2014: Attempt One



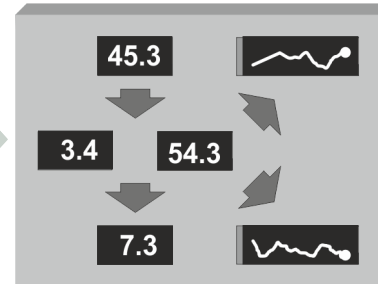
31.2		
	43	
78.1		
67.6	5.4	
	6.3	



django

{CSS}

Dashboard



Inflexibility



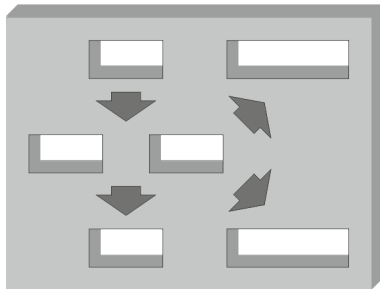
Effort Burden



Maintenance Burden

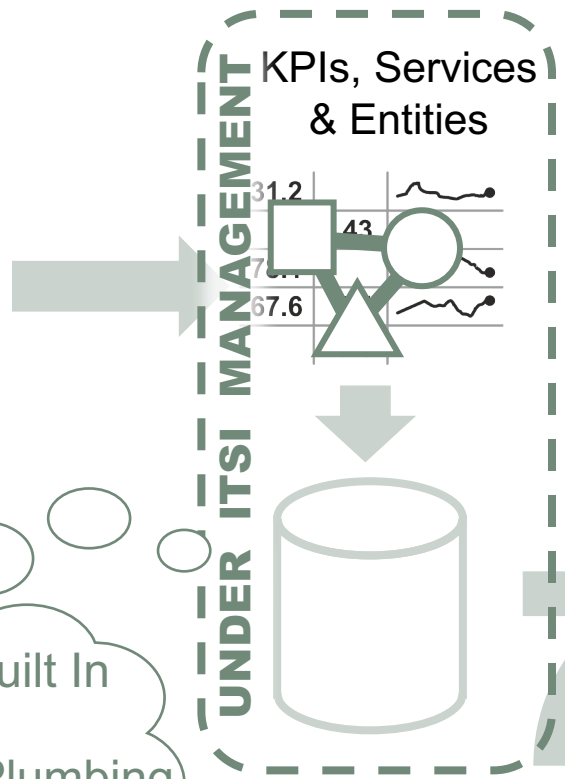


Skills Burden

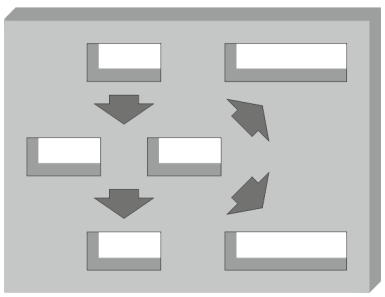
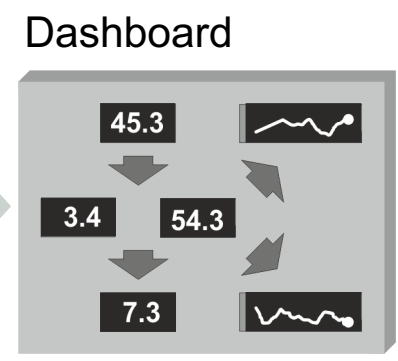


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2016: With ITSI



django
UI
Builder
{CSS}



John Lewis

130.60.4... [07...]
128.241.27...
ows NT 27...
kitemId=ES...
//buttercup-shopping.com/category.screen?category_id=GIFTS&JSESSIONID=5D15L9FF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FI-5W-03"
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What Did This Mean For Our Life Cycle?

Largely Unchanged

Develop More Assets

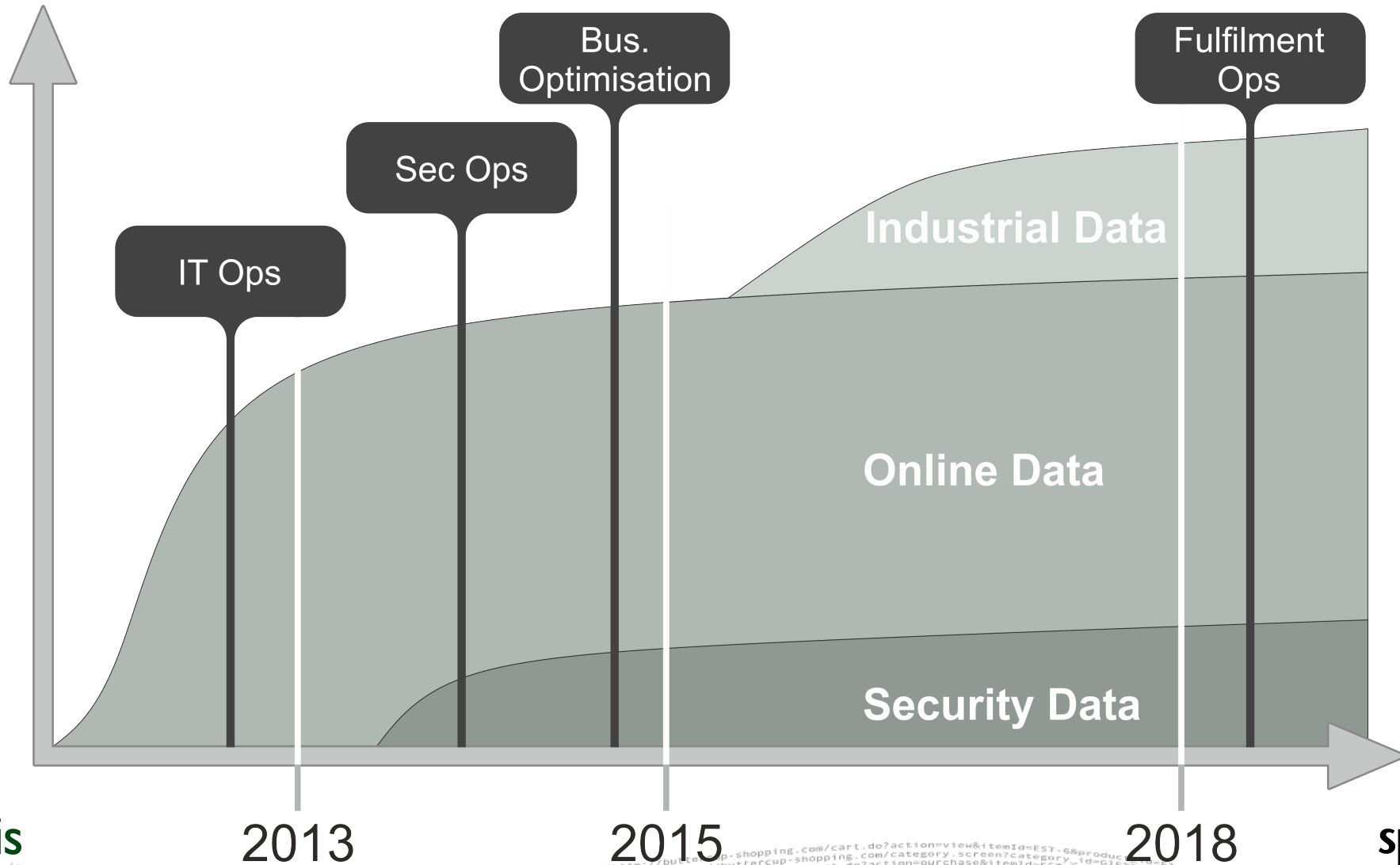
Improved



The World Changes

John Lewis

Beyond IT Ops at John Lewis



John Lewis



**KEEP
CALM
AND
FIGHT
BACK**

Q&A