From the industrial age to the digital age

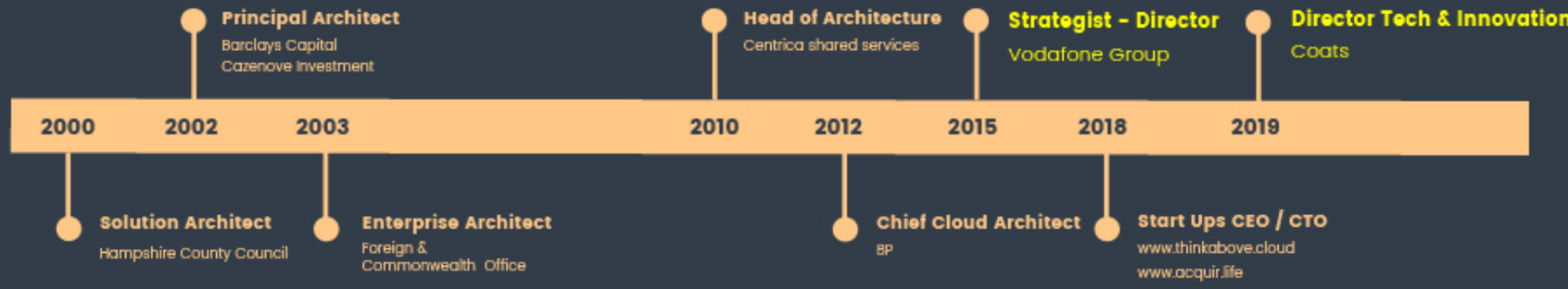
leading transformation in one of the worlds oldest Enterprises…

Paul & Tim: June 2020

SOME BACKGROUND

PAUL MCMAHON

COATS: DIRECTOR TECHNOLOGY & INNOVATION



TIM DEMPSEY

PROGRAM DIRECTOR

Who are Coats

coats.com

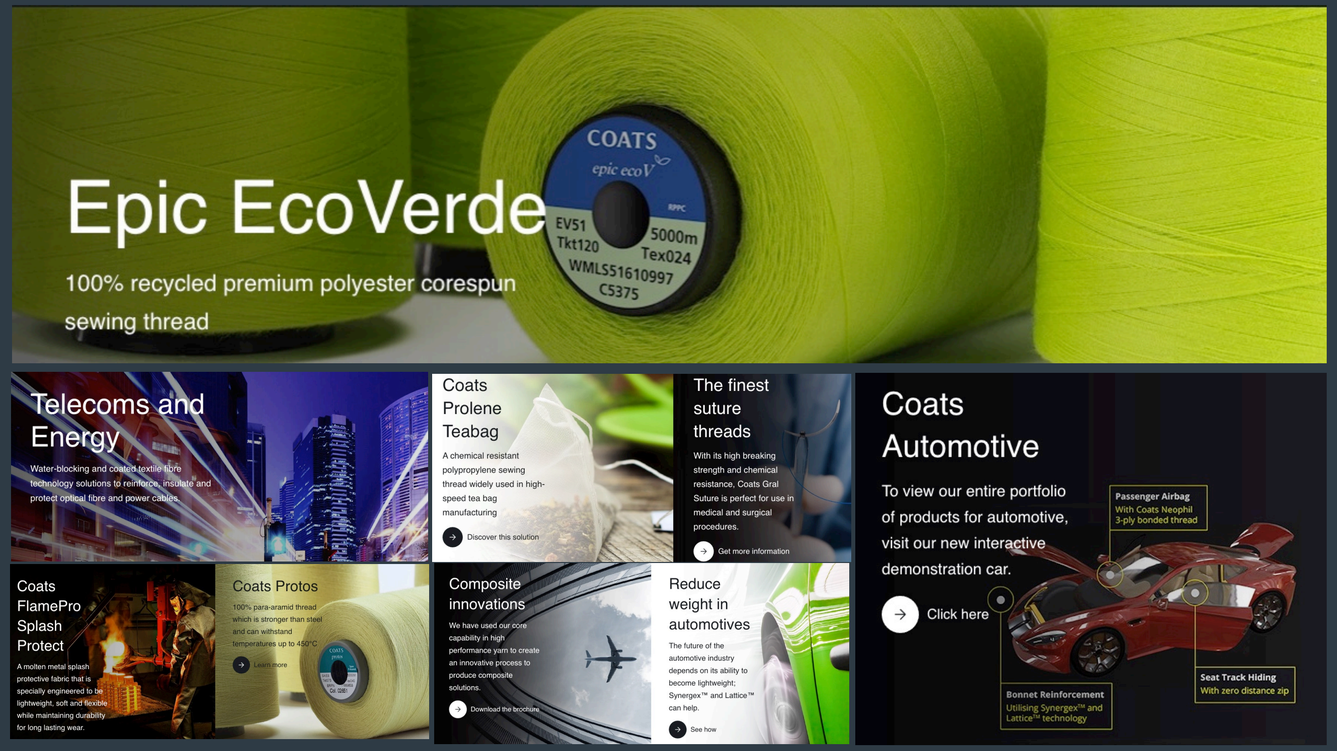
Est 1750s Paisley Scotland

Connecting Pioneering Trusted

World's leading manufacturer of thread, 17K employees / 50 Countries| Software / Engineering team of > 50

Thomas Edison used Coats thread in the first light bulb =>: Beyond the Stitch Line:

Coats Digital, Automotive, Telco, Energy & PPE…



The Common Transformation Challenge

Input		Output
Mainly external suppliers building software	→	Contractual relationship culture
Little test coverage, tech debt, slow releases	→	IT as a Tax, slow digital innovation
Lots of defects / bugs, older versions	→	Tech debt ever expanding, no prioritisation do all
Project based methodology, no automation	→	Delivery taking too long, speed / agility not possible
Confused or over simplistic vision	→	Unintended outcomes, missed opportunities
Deadline, milestone, must be live by…	→	Exceed budget, missed expectations
Automating everything means no control	→	human errors, more operational overhead

Mission:

Build a new Digital Capability, Establish a ‘Product’ delivery model, Create new Culture

Way Points

Navigate lack of Product Manager, Move from ‘Old Ways’ to be Agile

Build new Ecommerce Application B2B. Make Cloud Native use Micro Services Fast!

Refactor Manufacturing Engineering System used to Dye threads, 1.8 million lines of code

Transform through inclusion, upskill inherited developers

Route

UK Remote Team - recruit developers who will deliver the impossible & build new FTE SRE team in India

Self organising empowered teams, monthly face to face social / planning

3 month Wave horizon, Agree Wave OKRs, then continuously plan, seek constant feed back loops

Technical debt and austerity

Clarity in Vision with a simple mission: Put a Man on the Moon by 1970

DESIGN THINKING + **LEAN** + **AGILE**

Explore the problem

Build the right things

Build the thing right

Making the right choices or simply focus on reducing the impact of bad choices

Bridging the Product Mindset Chasm

Empathise: Observe Engage Listen

Foundation of human-centered design understanding people: the way they do things and why

Define: Data Experience Objectives

Create an actionable problem statement to define the right challenge and validate value

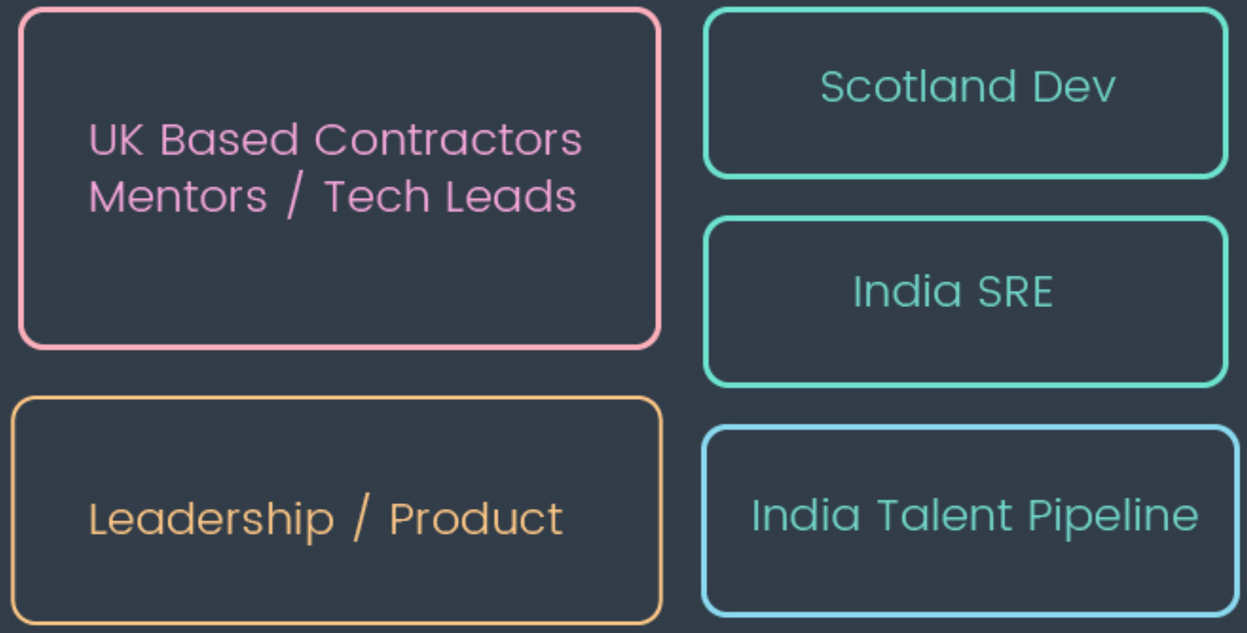
Ideate: Minimal Measure Feed Lean

No one knows the answer, how do we experiment to define outcomes that can be evidenced

New Digital Team Operating Model

Establish a no blame culture, you build it you run it! Value stream teams are blended and self organise with continuous collaboration

- Build Full Stack Team (Interims) 5 in total
- Form new Leadership team
- Recruit SRE New Team in India
- Upskill current team and address gender issue
- Create product management function
- Build sustainability with a talent pipeline



12 new FTE's (F7 M5)

Evolution of Coats eCommerce

40K Customers, Millions of Product Lines, Signifcant integration to SAP

D1
2012-2016

PHP, SQL Server, Apache, Virtual Machines

Trad Hosting

Monolith

Manual Tests

Support Tax

6 mth Dev Cycle

Waterfall

D2
2017-2019

Java, Cassandra, Elastic Search, Mesos Containers, Kong, Auth0, Virtual Machines

Microsoft Azure

Many Microservices

Manual Tests

High Tech Debt

Quarterly Release

W'Agile

D3
Est 2019

GKE, Kubernetes, Kotlin, gRPC, CockcroachDB ElasticSearch, Kong, Auth0

Google Cloud

Macroservices

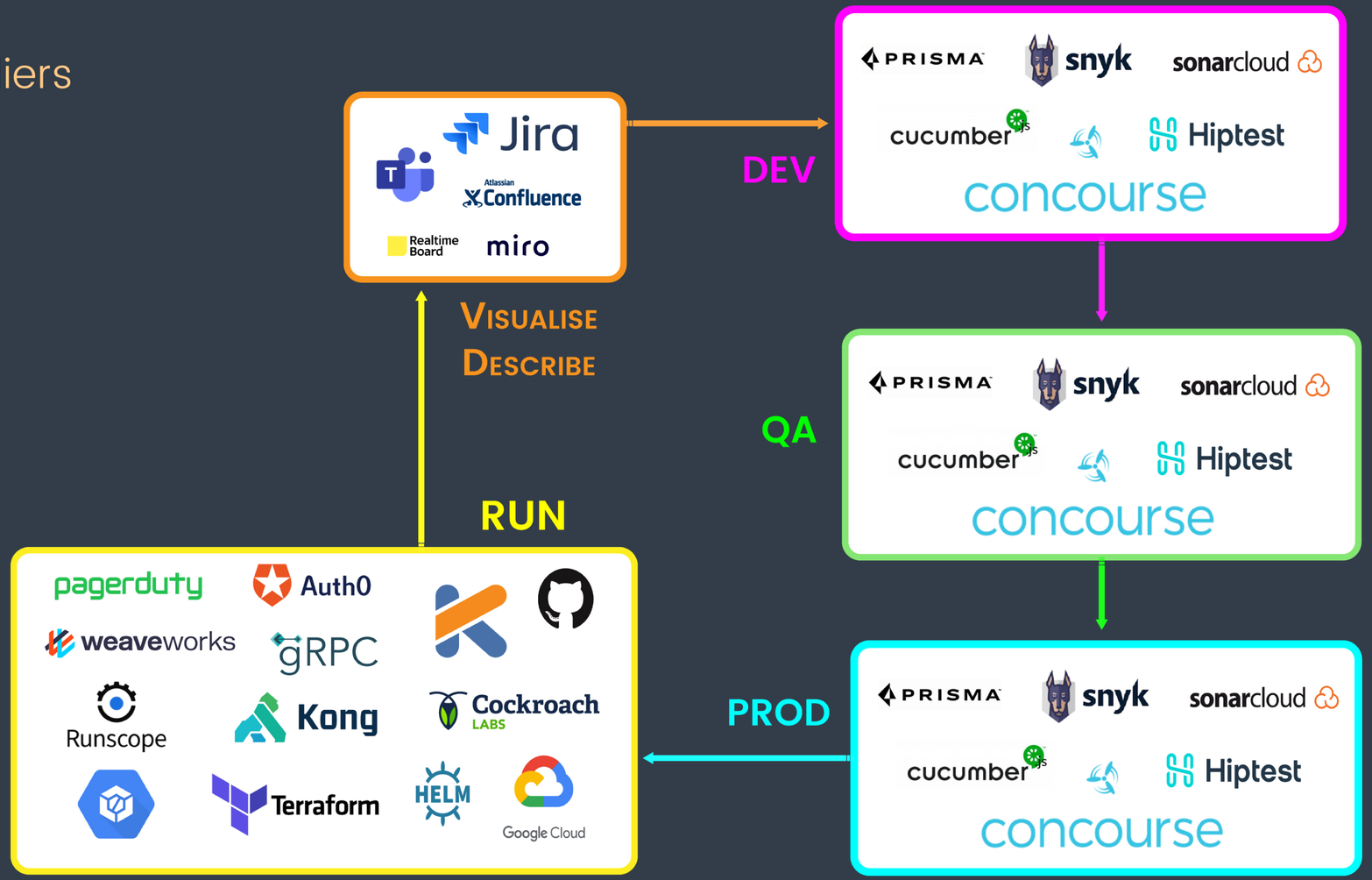
Highly Automated

Multiple Code Deploys per day

Agile

Build Automate and Run

- Internal Teams & External Suppliers
- DevSecOps and quality control
- Rapid development cycles
- No Ops / Automated Ops
- Experimentation enabler



Circle of Dev: Tech & Tools leveraged to win Talent Race

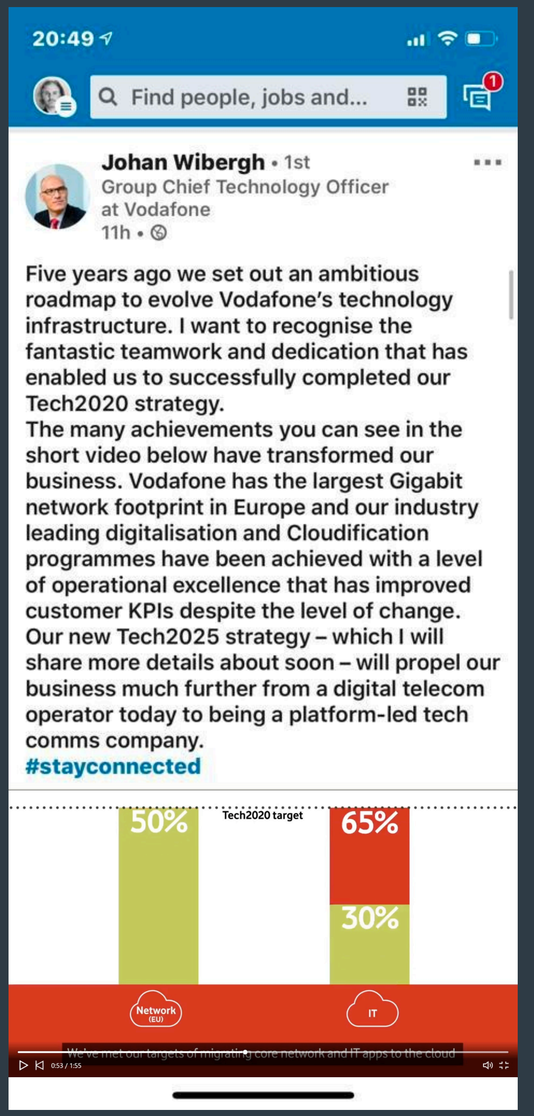
Did it all go as planned?

But things are never that simple...

Target Driven : 65% by 2020

Unintended consequences

Resulted in distorted outcomes



Surrey Live
27 mins ·

"I was pulling it up thinking ‘that has to be what I think it is’."
... See more

SURREY LIVE · 2-MIN READ

Man, 22, describes moment he pulled up unexploded bomb while fishing

8 6 comments 5 shares

Like Comment Share

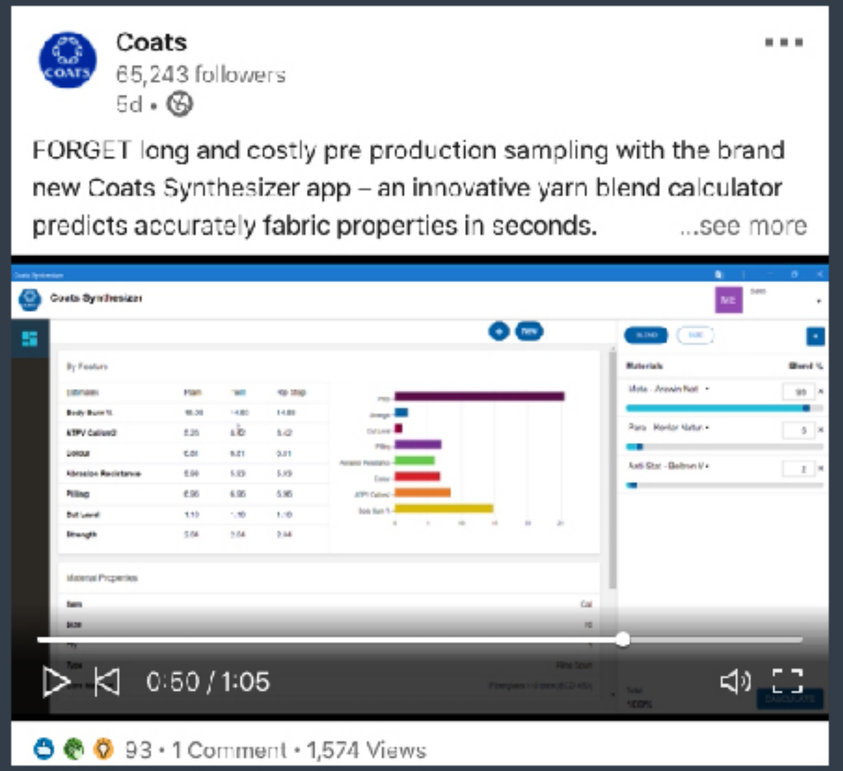
Celebrate the Wins

Rapid creation of digital products to help Coats and their customers is now reality

By leveraging our investment Google Cloud CI/CD pipeline, Coats can now rapidly build MLP's in WEEKS...

- Automation of code quality and testing
- New people capability - SRE Team
- Focus on value creation rate

Building a solid foundation can sometimes be hard to justify, it requires significant investment to do it right, whilst it may impact short term perception, the eventual pay off can be huge!



Part of the Coats ongoing Digital message: June 2020 Linkedin / Facebook

With our collective experience

things still go awry…

why?

The Forces

P(A + B =Y)

The forces are constantly interacting with each other. Keeping them in balance will maintain a healthy flow of output. If they become unbalanced, flow of work will stall or simply discontinue.

Development

Nurturing leadership style to create team rhythm to:

Guide, aid decision, qualify, build consensus and clarity with a simple Vision

Business

Co-create & prove value fast to:

Build Confidence & Energise the Inertia, Combat Muscle Memory

Mandate

An upwards management style to:

Regulate & Target Pressure, proactive expectations, continious reinforcement

Dr Conor Farrell

From: Conor Farrell
Sent: Friday, May 22, 2020 11:30:11 AM

Hi both,

Here are some equations to show what I was talking about yesterday. There are examples of negative feedback loops all over the place - in the human body it's usually called homeostasis. An example would be stopping your body temperature or blood sugar from going too high or low. Imagine you have a system, doesn't matter what, made up of a process (P) which has some input and output (O). There is a controller (C) which sends a signal to an actuator (A) that modifies the process, given some desired reference input (R), to get the right output. You can write this in an equation as: O = PACR

Or, in other words, the output is the product of the input, the process, the actuator and the controller. However, you might also have some disturbances (D) and uncertainty (U) in the system: O = D + (U + PA)CR

You don't know the exact values of D or U - think of them as unplanned events and not being sure exactly what will happen as this is the real world respectively. This means you can't create a controller that will manage things perfectly without feeding the output of one step back in as the input to the next step. O = D + (U + PA)C(R - O)

In other words, the difference between the desired and actual value (R - O) is used. This reduces down to:

- O = D + (U + PA)CR - (U + PA)CO
- O * (1 + (U + PA)C) = D + (U + PA)CR (moving the negative term to the left hand side)
- => O = D / (1 + (U + PA)C) + R * ((U + PA)C) / (1 + (U + PA)C)

The controller can now manage the uncertainty - if the value of C goes towards infinity, two things happen - the disturbances are divided by a bigger and bigger number and go to zero, and the uncertainty term goes towards zero also (as it's a big number divided by a big number + 1), leaving you with your output as R, which is what you were aiming for.

In the business context, what you were talking about as your role is to essentially to manage the value of C, so that the disturbances and uncertainty go away and you end up delivering working software that adds value at the right cadence. So you want to break up the equation into one bit for each of your forces it would be something like:

$$O = D / (1 + (U + P(F1 + F2 + F3)C) + R * ((U + P(F1 + F2 + F3))C) / (1 + (U + P(F1 + F2 + F3))C)$$

where F1, F2, F3 are the forces you are talking about, can give them more meaningful variables. This assumes that the system is some linear combination of the three, which in real life it almost certainly isn't, but I doubt you want to talk about nonlinear mixing terms. :)

Hope the above makes sense, let me know if you have questions...

Conor


GERMAN
Sapiens

C

C represents the leadership team tasked with delivering the mandate for Transformation. They develop a strategy to create a digital capability which creates products that generate value. To be successful C must continuously balance the three forces. If more is delivered than the business can implement, or the mandate piles on too much pressure, output will be disrupted or even STOP.

O

O is business value created, the output of the forces, there can be multiple outputs that combine to result in the Strategy.
Good examples are revenue generating features that delight customers, rather than the number of lines of code or sprint story points .

D

D is a Disturbance in the system, and external uncontrollable event. A bad event, like Covid 19, would be a large negative number squashing Output and causing disturbance in the three forces.

Δ

Δ - Uncertainty is ever-present within the three forces. The Leadership team C use their skills and experience to take corrective actions that manage the uncertainties by working to remove assumptions and residual risk can correct the three forces, helping to restore balance.

S

S The DevOps and Digital Transformation NIRVANA of fast value creation, a promised land where happy, engaged developers exceed the board's target for the mandate, and the business embraces agile and lean ways of working and make value flow.
Output rarely matches the ambition of S.

The Success Calculus

P(A + B = Y) The Forces:
Development
Business
Mandate

C Controller:
Transformation
Leadership

O Output:
Value
Creation Rate

D Disturbances
in the Force:
External Events

Δ Uncertainty:
Residual
UnTested Assumption

S Strategy:
The DevOps &
Transformation
Nirvana

$$O = \frac{D}{1 + (\Delta + P(A + B + Y))C} + \frac{(\Delta + P(A + B + Y))C}{1 + (\Delta + P(A + B + Y))C} S$$

Final Thoughts

What could #DOES20 help us with?

Can our Success Calculus be matured and deployed as a useful model of digital transformation, and be used to monitor the health of our work and improve outcomes? We'd like your help in finding out, so if this has piqued your interest ping us on Slack or via http://successcalculus.io

Can we help you?

If you some of our messages have resonated and you think we may be able to help you? Feel free to get in touch!

paul@thinkabove.cloud or tim@hayaku.digital

Thank you & Stay Safe!

$$O = \frac{D}{1 + (\Delta + P(A + B + Y))C} + \frac{(\Delta + P(A + B + Y))C}{1 + (\Delta + P(A + B + Y))C} S$$

http://successcalculus.io