Nudge theory: influencing empowered teams to do the things that matter to you

Sarah Wells
Principal Engineer, Financial Times
@sarahjwells
Hello
1. The challenge
2. The theory
3. Influencing teams at the FT
4. Recommendations
1. The challenge
Need to be able to try things out and take risks
We don’t have time to wait for a decision
We don’t have to build it right to find out if it’s the right thing
Continuous delivery means we can get this stuff out there in days
Being able to do stuff quickly is great!

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“You build it, you run it”
Great for building stable well-monitored services
I’m not going to support it if someone forced me to do it wrong
When to use Kafka

- Messaging that is **valuable in aggregate**
  e.g. user activities, log aggregation, UI/performance/diagnostic events, clicks
- Huge throughput of data
- Event sourcing
- Universal Data Pipeline
One size does NOT fit all
BUT...
What happens when the project finishes?
What’s it like to move teams?
What about higher level goals?
For the good of the company

• Security
• Cost control
• Operability
• Support

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For the good of the people

- Recruitment
- Career growth/learning
- Ability to switch teams
2. The theory
“a ‘nudge’ is essentially a means of encouraging or guiding behaviour”

–David Halpern, ‘Inside the Nudge Unit’
NEW INTERNATIONAL EDITION

‘Hot stuff’
SUNDAY TIMES

‘Hugely influential’
GUARDIAN

nudge

Improving decisions about health, wealth and happiness

THALER & SUNSTEIN

THINKING, FAST AND SLOW

DANIEL KAHNEMAN

Winner of the Nobel Prize in Economics
Attractive to governments!

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US government
“A growing body of evidence demonstrates that behavioral science insights ... can be used to design government policies to better serve the American people”


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UK government

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The “Nudge Unit” now employs 70 people in London, New York and Sydney
Data-driven
Some examples
Schiphol airport
Toilet spült automatisch
Toilet flushes automatically
“Sphinx, the urinal manufacturer that provides the toilets for Schiphol, says that having the fly in the toilet represents savings in cleaning costs of 20% or more”

– https://worksthatwork.com/1/urinal-fly

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UK organ donation register

– http://www.behaviouralinsights.co.uk/publications/applying-behavioural-insights-to-organ-donation/

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Thank you.
Please join the NHS Organ Donor Register.

Every day thousands of people who see this page decide to register.

Join or find out more.
Thank you.
Please join the NHS Organ Donor Register.

Three people die every day because there are not enough organ donors.

Join or find out more.

Thank you.
Please join the NHS Organ Donor Register.

You could save or transform up to 9 lives as an organ donor.

Join or find out more.

Thank you.
Please join the NHS Organ Donor Register.

If you needed an organ transplant would you have one? If so please help others.

Join or find out more.

Thank you.
Please join the NHS Organ Donor Register.

If you support organ donation please turn your support into action.

Join or find out more.
In one year, would mean ~ 96,000 additional registrations
Travel during the London 2012 Olympics
62 million journeys during the Olympics
– 35 per cent above normal
Waterloo station is expected to be busy on weekdays from 7.00am - 10.30am during the Paralympic Games.

Find out how you will be affected at GetAheadoftheGames.com
“Across the two weeks of the Olympics, more than three quarters of the London travelling population made some sort of change to their travel patterns as a result of the Games and just 23 per cent continued to travel as normal.”


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“the government’s Ride to Work scheme ... leapt in popularity after the Olympics, with a 30% increase in uptake in the third quarter of 2012 compared with 2011.”


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So - how do you influence behaviour?
If you want to encourage a behaviour, make it:
Easy

• Reduce the ‘hassle’ factor of taking up a service
• Harness the power of defaults
• Simplify messages
Attractive

• Attract attention

• Think about the incentives
Social

- Show what other people are doing
- Use the power of networks
- Encourage people to make a commitment

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Timely

• Pick the right time

• Offer immediate costs and benefits

• Help people plan behaviour in advance

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Easy, Attractive, Social and Timely (EAST)


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3. Influencing teams at the FT
A story
FT Platform

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Lots of decisions made for you
Didn’t collaborate with their end users
‘Forced’ upgrades
Tools and APIs over platforms

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How do you get people to use your tools and APIs?
Defining what it means to build a system
Checklists are great
An engineering checklist
This latest version of the engineering checklist is designed to be simple to follow and apply. Detailed below are activities which must be considered before, during and after building services. Each tile contains basic points and apply along with a link to more information. The aim is to ensure we achieve a minimum standard in order to protect the integrity of our offerings to our customers.

<table>
<thead>
<tr>
<th>#</th>
<th>Task</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1 | Buy or Build | - Is there something out there that does what we need?  
- Have you considered the total cost of ownership? |
| 2 | Technical Due Diligence | - Are you bringing in 3rd party products?  
- Do we know enough about this entity? |
| 5 | Security & Privacy | - Do we really need to store that information?  
- Fines for breaches start at €20 million |
| 6 | Supplier DB updated | - Record supplier, contact and SLA information  
- Needed by all support levels in case of issue |
| 9 | Release logs & CRs | - Automated release logs built into your CI job  
- CRs raised for any changes applied manually |
| 10 | Runbook | - system code & service tier appropriate info supplied?  
- your info will appear in dewey |
1. Buy or Build

- Is there something out there that does what we need?
- Have you considered the total cost of ownership?
- Automated release logs built into your CI job
- CRs raised for any changes applied manually
Konstructor - CR API
This is the change request api to simplify your deployment process.

Created by Engineering Tooling Team
See more at http://konstructor.in.ft.com
Contact the developer

Change Request

POST /v2/close
Close a CR entry.

POST /v2/emergency
Creates an emergency CR entry.

POST /v2/fyi
Creates an FYI CR entry.

GET /v2/help
Creates a release log entry.

GET /v2/list/{fromDate}/{toDate}
List all CR's for all systems.

GET /v2/list/{fromDate}/{toDate}/{systemCode}
List all CR's for the specified system code.

POST /v2/normal
Creates a normal CR entry.

POST /v2/releaselog
Creates a release log entry.

Implementation Notes
A release log is for a non-audited system and can be done in realtime. You must self manage communication to those affected.
The optional fromId,toId, projectId and repoId is to automatically populate your release details from Git.
★ = Mandatory

ownerEmailAddress★ - Your Salesforce email address.
summaryOfChange★ - Your summary of the change.
CR API

**releaselog2**

Creates a release log entry mainly for use within your deployment jobs.

Examples:

Minimal request for production release:

```
releaselog2 -o myemailaddress@ft.com -c 'This is my change' -d 'A test change to see if this works' -i ft-myServiceModule
```

Request to notify release channel in Slack:

```
releaselog2 -o myemailaddress@ft.com -c 'This is my change' -d 'A test change to see if this works' -i ft-myServiceModule -n
```

Raise CR with Stash (and if available Jira) details:

```
releaselog2 -o myemailaddress@ft.com -c 'This is my change' -d 'A test change to see if this works' -i ft-myServiceModule -p FTT -r konstructor -f 1.1.18
```

A full request for a test release with multiple services and Slack notification to different channel

```
releaselog2 -o myemailaddress@ft.com -c 'This is my change' -d 'A test change to see if this works' -i ft-myServiceModule -e test -x 'Will be down for 2 m
```

see `releaselog2 -h` for more details.

**closerl**

Closes a release log CR.

```
closerl -i 12345456 -o myemailaddress@ft.com -c 'implemented'
```

see `closerl -h` for more details.
Github web hook
5 Security & Privacy

- Do we really need to store that information?
- Fines for breaches start at €20 million
HI All,

Many of you may be aware of the latest SSL vulnerability called DROWN.

Some good news;

- Not as bad as heartbleed
- Exploit Requires an old version of OpenSSL which is disabled or disarmed
- Redhat have release a fix (vulnerabilities are disclosed)
- Cisco have rated this a level 1 vulnerability

Suggest next steps;

- Owners check releases/patches from relevant vendors (Solaris / Network kit / Microsoft etc..) or third parties
- Any SSLv2 still configured should be disabled ASAP as per guides e.g. Look to disable SSLv2 (and SSLv3) on the above host - this is being investigated by the Central Services Environments team
- Roll out vendor patches as part of the normal FT Patching Update Policy as this is not rated above our requirement for immediate action, and most systems are not vulnerable

50% of the internet is apparently vulnerable to this. The fact we have to do so little validates that being bold on patching/updates/strong/secure configurations means we do not need to divert lots of resources to urgently fix this.

Any questions please contact the Cyber Security team via email or slack.

Thanks
White Source Software
3rd Party Library Vulnerability Management

1. Request WSS account: http://goo.gl/[redacted]

2. Choose the right plugin for your project: http://goo.gl/[redacted]

3. Don't forget to tag your project: systemCode: ft-security

4. Track your project on splunk: https://[redacted]

https://saas.whitesourcesoftware.com/

Try here: http://goo.gl/[redacted]

Get started with White Source at:
https://sites.google.com/a/ft.com/security/continuous-delivery-security/white-source-software
General Security Questions / Advice

- **Non-critical**
  - Example: How do I share a document securely?
  - Contact Cyber Security
    - Email: [redacted]
    - Slack: [redacted]
    - #cyber-security-help
  - Target Response: As soon as possible

Report a Security Incident

- **Critical**
  - Breaches, leakages, suspicious activity, phishing attempts, DDoS, etc.
  - Report incident (24/7)
    - Call: [redacted]
      - Option 2
    - Email: [redacted]
      - Externally: +44 (0) 207 87...
  - Target Response: 15mins

Lost Devices

- **Critical**
  - Phone, Laptop, Tablet
  - Contact IT Service Desk (24/7)
    - Call: [redacted]
      - Option 2
    - Externally: +44 (0) 207 87...
  - Target Response: Notification
- Make sure you cover basic availability as a minimum
- Service status endpoint via /__health
"schemaVersion": 1,
"systemCode": "ContentPublicReadApplication",
"name": "ContentPublicReadApplication",
"description": "ContentPublicReadApplication",
"checks": [
  {
    "lastUpdated": "2016-10-29T16:17:38Z",
    "ok": true,
    "checkOutput": "OK",
    "name": "Connectivity to content source",
    "id": "Connectivity to content source",
    "severity": 1,
    "businessImpact": "Content access will not be available to API consumers (NextFT/B2B).",
    "technicalSummary": "The service is unable to connect to a content source (e.g. content preview or document store API). Content cannot be read from the store."
  }
]
## Service health status

**ContentPublicReadApplication**: ContentPublicReadApplication

### All checks OK

<table>
<thead>
<tr>
<th>Connectivity to content source</th>
<th>a few seconds ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>OK</td>
</tr>
<tr>
<td>Severity</td>
<td>1</td>
</tr>
</tbody>
</table>

**Business impact**: Content access will not be available to API consumers (NextFT/B2B).

**Technical summary**: The service is unable to connect to a content source (e.g. content preview or document store API). Content cannot be read from the store.

<table>
<thead>
<tr>
<th>Service</th>
<th>Status</th>
<th>Health</th>
<th>Last Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-CO Prod UK lists publish</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod US lists publish</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod UK lists read</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod US lists read</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod UK image publish</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod UK content publish</td>
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<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Prod US concordances read</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
<tr>
<td>CO-CO Publishing Prod Active</td>
<td>OK</td>
<td>Healthy</td>
<td>17:25</td>
</tr>
</tbody>
</table>
Communication
Good things get around
Graphite and Grafana

@sarahjwells
metrics:
  reporters:
  - type: graphite
    frequency: 1 minute
    durationUnit: milliseconds
    rateUnit: seconds
    host: graphite.ft.com
    port: 2003
    prefix: content.<%= @config_env %>.api-policy-component.<%= scope.lookupvar(':hostname') %>
Circle CI

@sarahjwells
machine:
  services:
    - neo4j
  environment:
    NEO4J_TEST_URL: http://neo4j:x@localhost:7474/db/data/

test:
  pre:
    - 'curl -u neo4j:neo4j -H "Content-Type: application/json" -X POST -d "{{"password":"x"}}" http://localhost:7474/user neo4j/password'
Giving people information
Sarah Wells to Universal, Stuart

Hi Stuart,


Thanks,
Sarah

---

On 12 June 2015 at 12:48, Stuart Walsh wrote:

Dear all,

Please find below a summary of the Top 10 Alerts received by Operations across 1st June – 7th June 2015. We are either not required, require a blackout or some fine tuning.

We have seen quite a few Splunk alerts of late and would appreciate any adjustments that can be made to not be sent.

Our thanks to all the teams that are helping us lower these email alerts. It is helping us to keep on top of the situation.

Stuart
AWS Cost Overview

PROGRAMME: FT.COM

Monthly Cost: $1
Weekly Cost: $5
Weekly Cost Decreased by: $3
Migrate to Amazon Linux

Programme: FT.COM

Free Linux Percentage of EC2 Estate

Percentage of Running EC2 Instances by Operating System

Potential Monthly Savings

Figure based on 100% migration from [ ] to Amazon Linux.
Programmatic checks for standards compliance
FT AWS tag standards

- team
- environment
- stopSchedule
- etc...

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Tagbot: checking AWS tags and terminating instances that don’t comply
4. Recommendations
1. Treat internal teams as service providers
“pick the best value tools for the job at hand, be they things developed and supported by internal teams or external to the company.”

– matt.chadburn.co.uk/notes/teams-as-services.html

@sarahjwells
Internal teams no longer have a captive market
But they should have all the advantages
1. Treat internal teams as service providers
2. Define expectations
“Your system is expected to be stable, secure and well monitored”
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
“If you as a project choose new technologies, **either** you do overnight support **or** you provide enough documentation and handover for first line to be happy doing so”
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
4. Define what you want, not how to do that

@sarahjwells
“It should be possible for a new developer to get their development and deployment environment set up in 20 minutes”
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
4. Define what you want, not how to do that
5. Define standards
“Your web application health check should look like this”
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
4. Define what you want, not how to do that
5. Define standards
6. Share knowledge

@sarahjwells
“Look at this! And here’s how easy it is to use”
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
4. Define what you want, not how to do that
5. Define standards
6. Share knowledge
7. Show people how they’re doing
1. Treat internal teams as service providers
2. Define expectations
3. Offer options
4. Define what you want, not how to do that
5. Define standards
6. Share knowledge
7. Show people how they’re doing
8. If no-one is doing the thing you want them to - it’s your problem

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You need to be willing to discuss things
9. Trust your teams
How does this relate to Nudge theory again?
Easy: a reminder

• Reduce the ‘hassle’ factor of taking up a service
• Harness the power of defaults
• Simplify messages
Easy:

- Checklists
- APIs
- Example code, client libraries

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Easy:

• Supporting self-service

• Customer service: dedicated slack channel, status pages, helpful error messages, feedback mechanisms
Attractive: a reminder

• Attract attention

• Think about the incentives
Attractive:

• Showing how this will make their life less painful
• Making clear the value that team and the FT as a whole get from doing it
Attractive:

• Information in places people look at

• Great documentation, screen shots, demos
Social: a reminder

• Show what other people are doing
• Use the power of networks
• Encourage people to make a commitment
Social:

- Show how other people are doing on this measure
- Agreeing on when a team will tackle something
Social:

• Showing off about stuff - lightning talks, demos, explainer sessions, posters

• Getting client teams to talk about how easy/useful it is

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Timely: a reminder

- Pick the right time
- Offer immediate costs and benefits
- Help people plan behaviour in advance
Timely:

- Telling people what they are going to need to do and when
- Frequently and via lots of mechanisms
Timely:

• Telling people what’s coming next

• Talking to customers and doing things for them proactively

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1. The challenge
2. The theory
3. Influencing teams at the FT
4. Recommendations
Thank you!

@sarahjwells