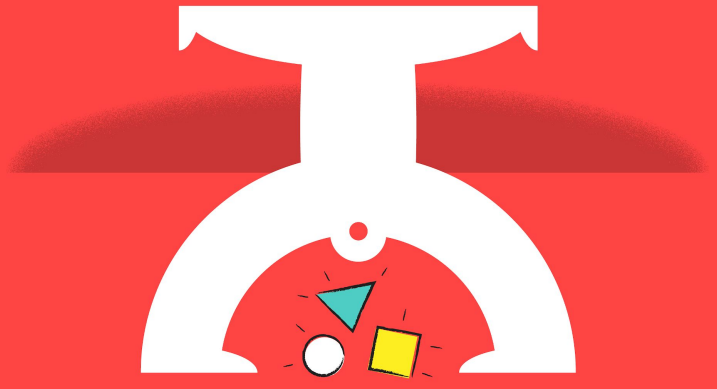

DevOps: Why, How, and What

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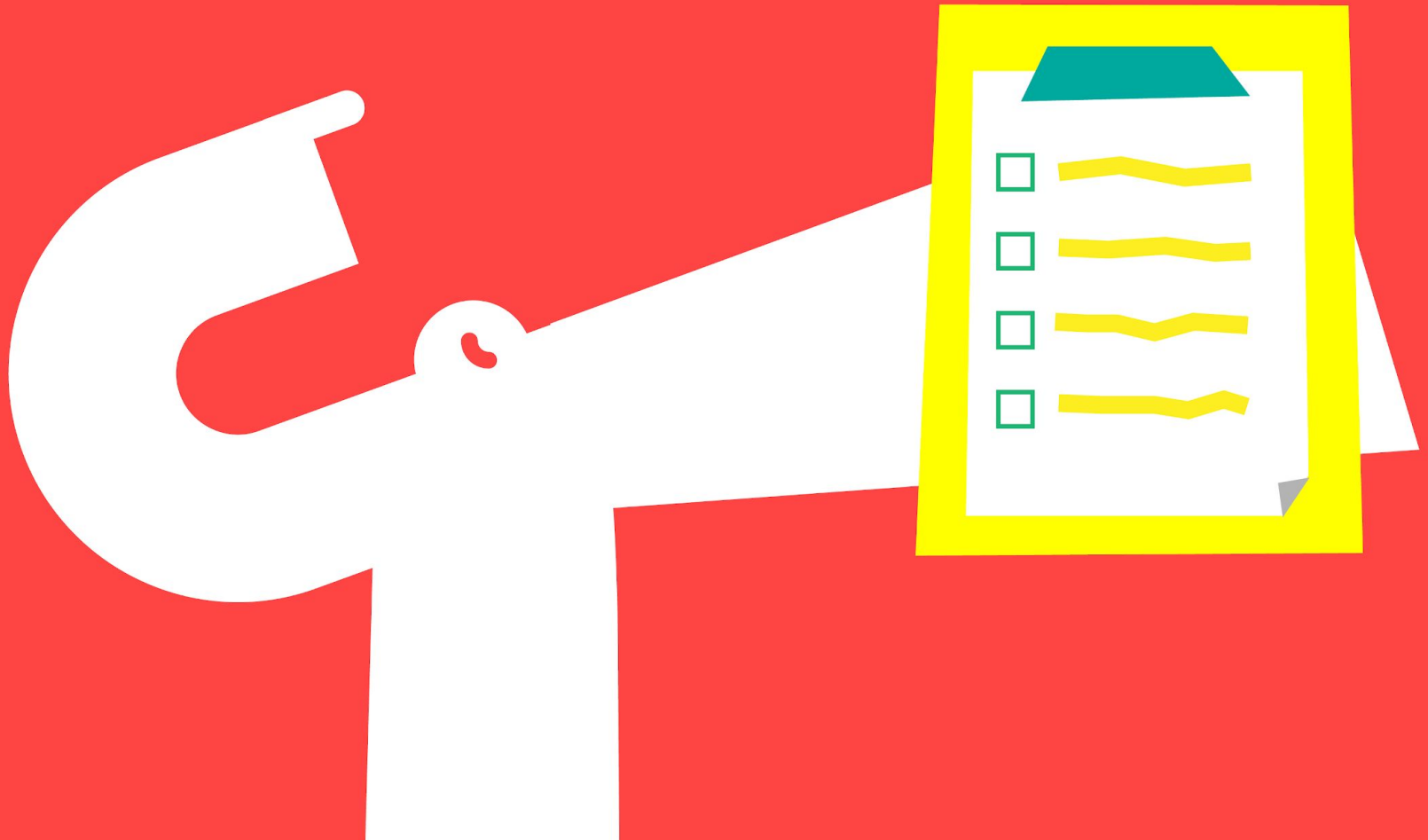
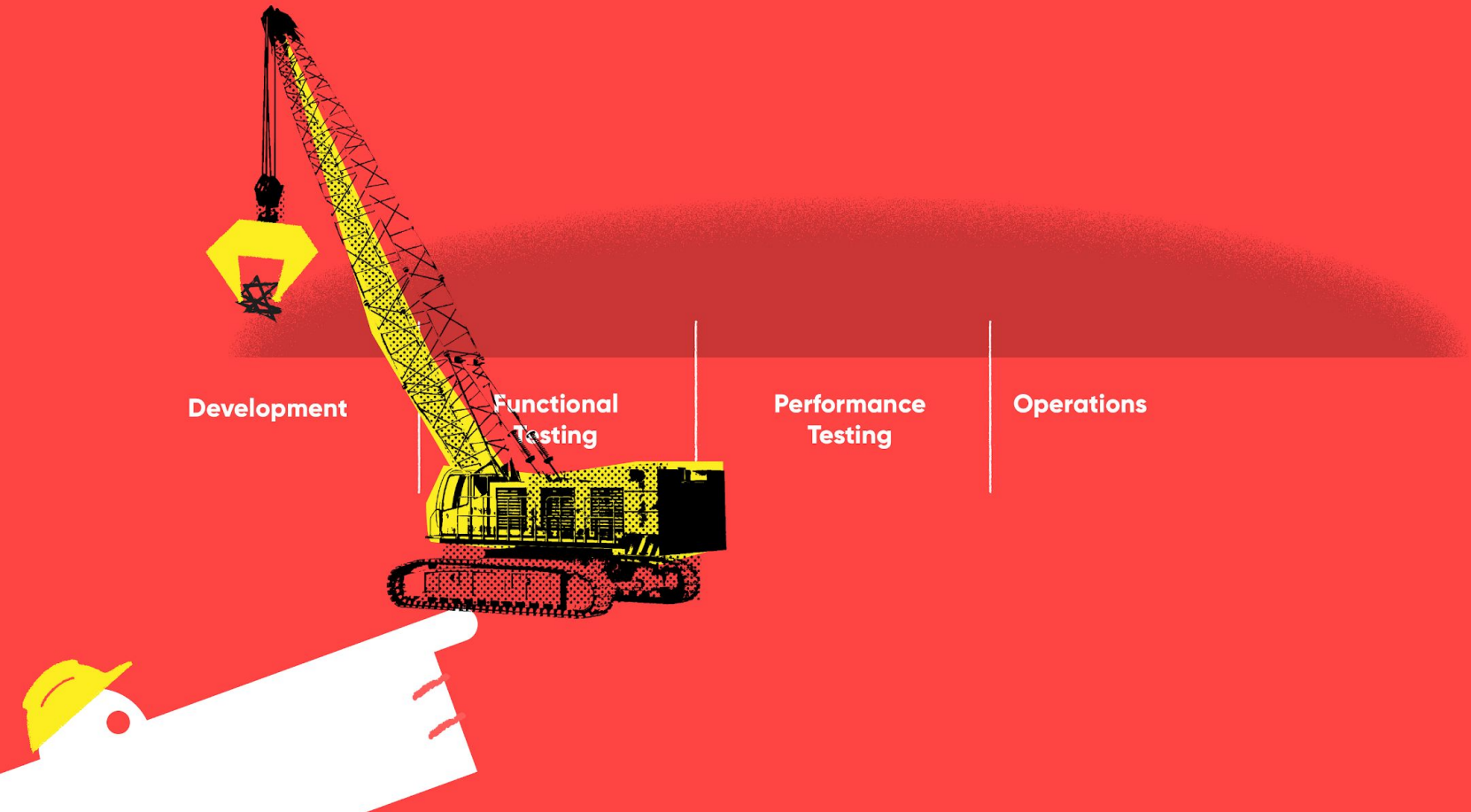
Rob Bayliss | rob@lcm.io | @rbayliss | Last Call Media

Why DevOps?

IS IT SAFE AND POSSIBLE TO RELEASE WORK AT ANY TIME?




Development
Functional Testing
Performance Testing
Operations

Development

Functional Testing

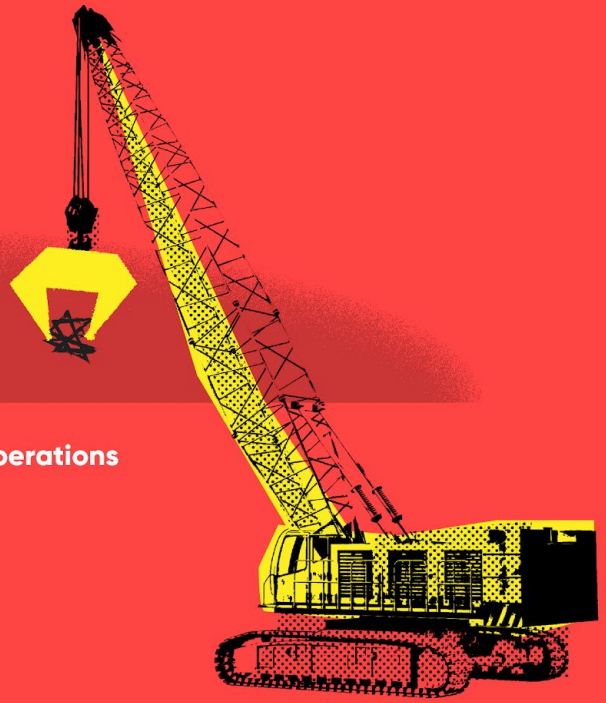
Operations

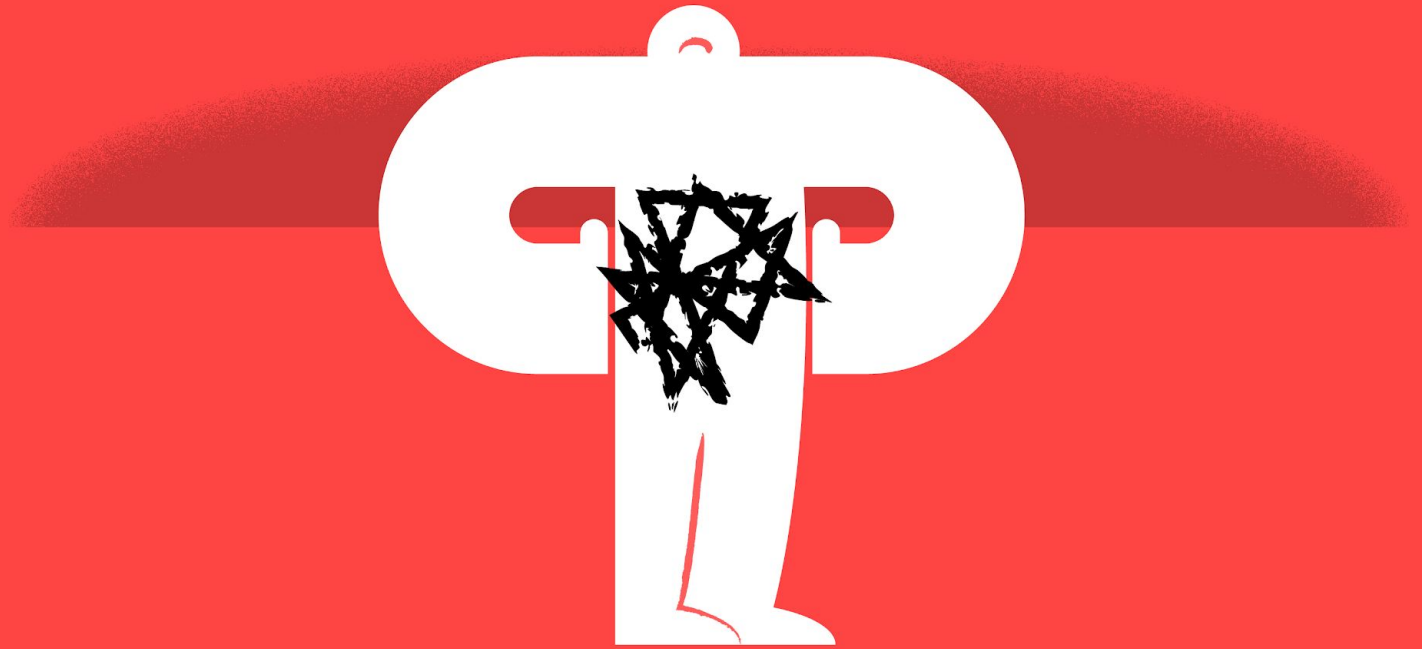
Development

Functional Testing

Performance Testing

Operations





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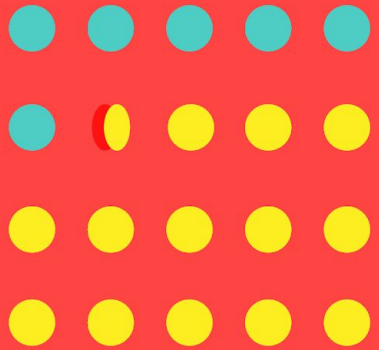

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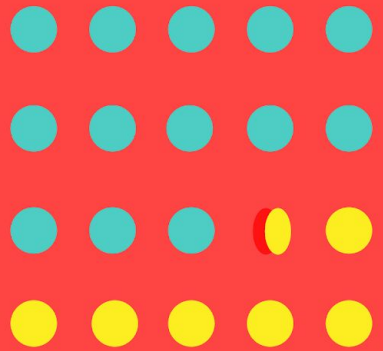

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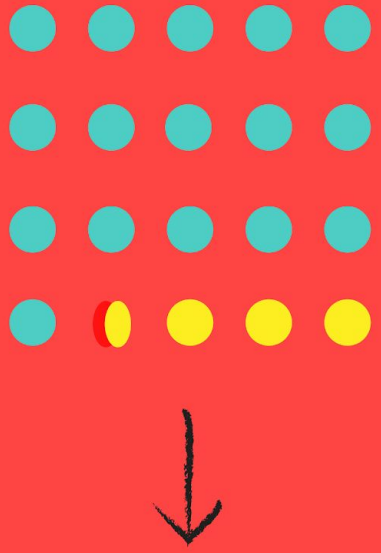

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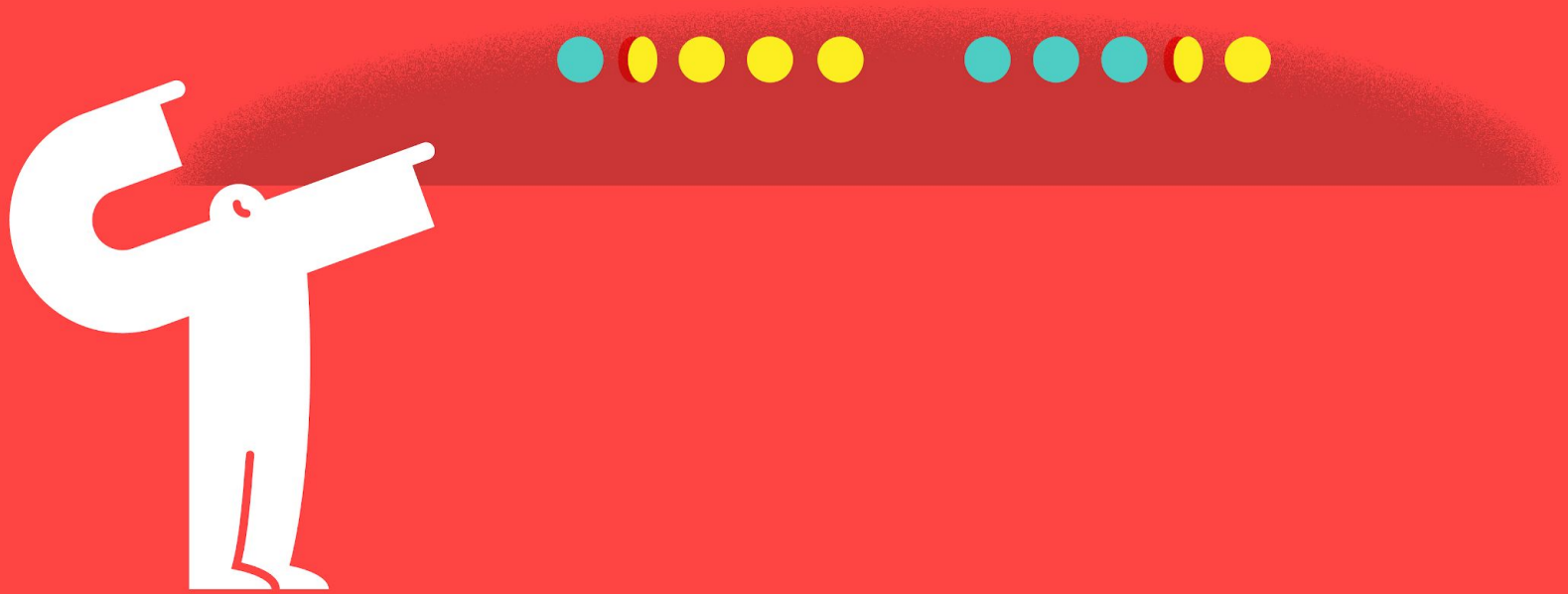

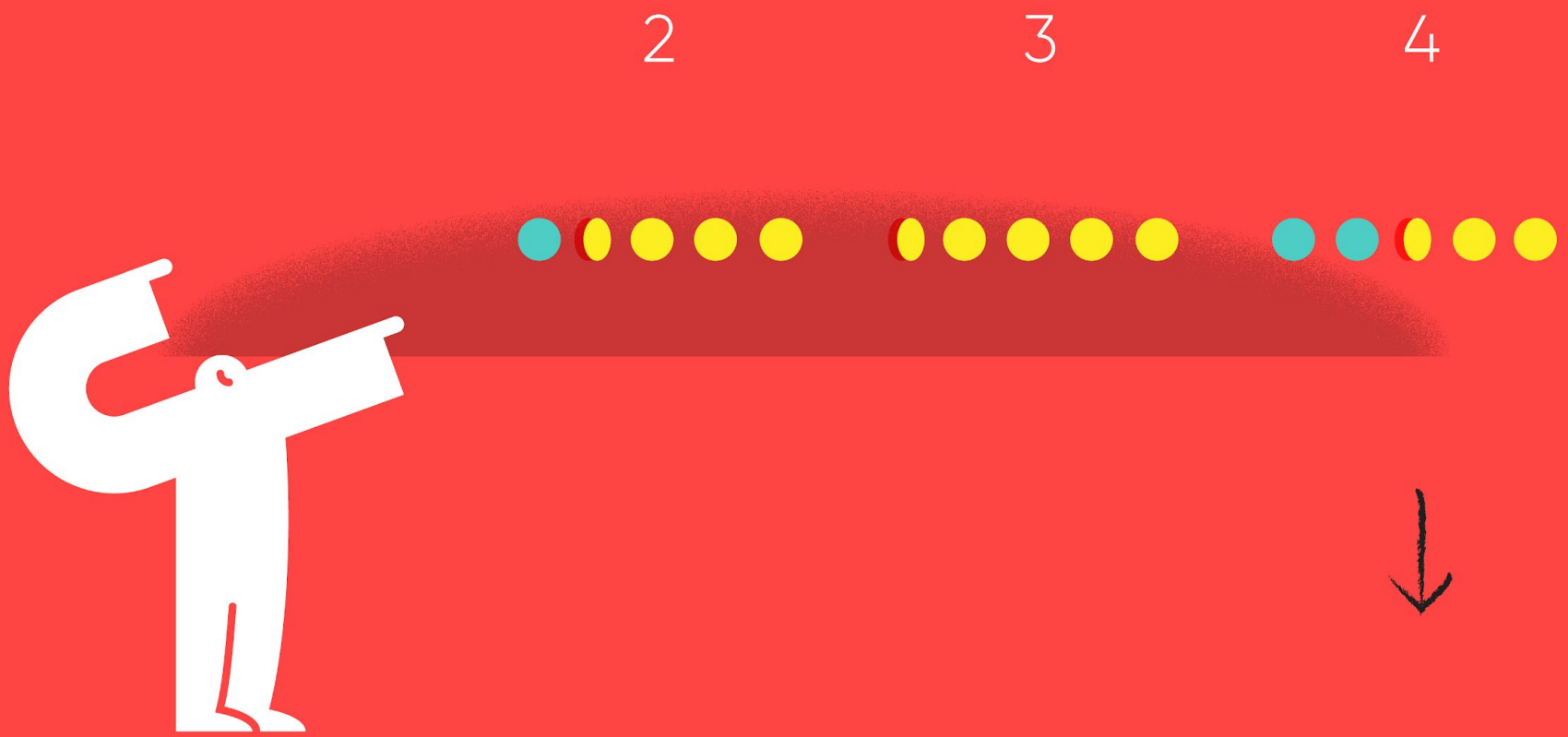
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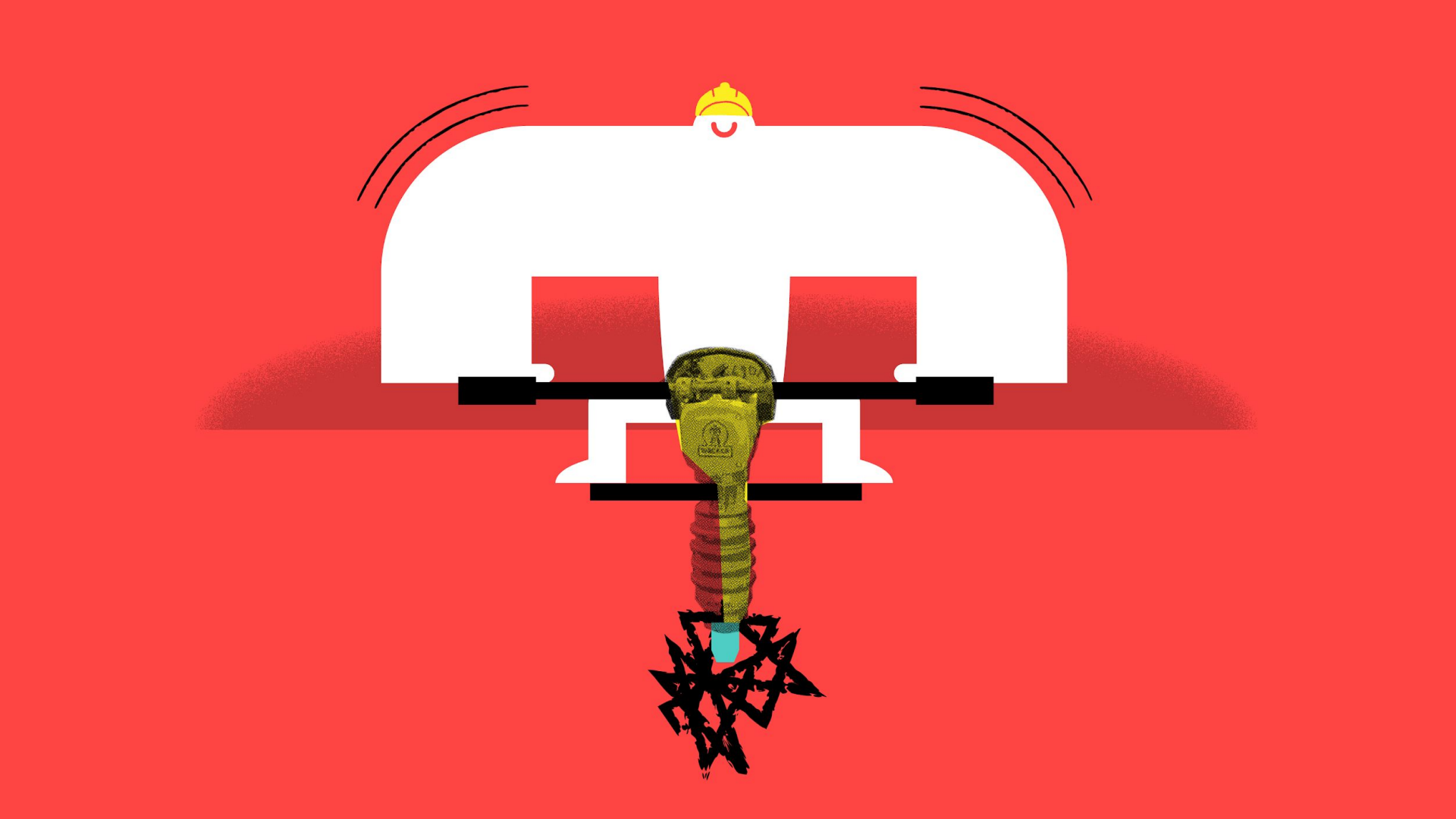

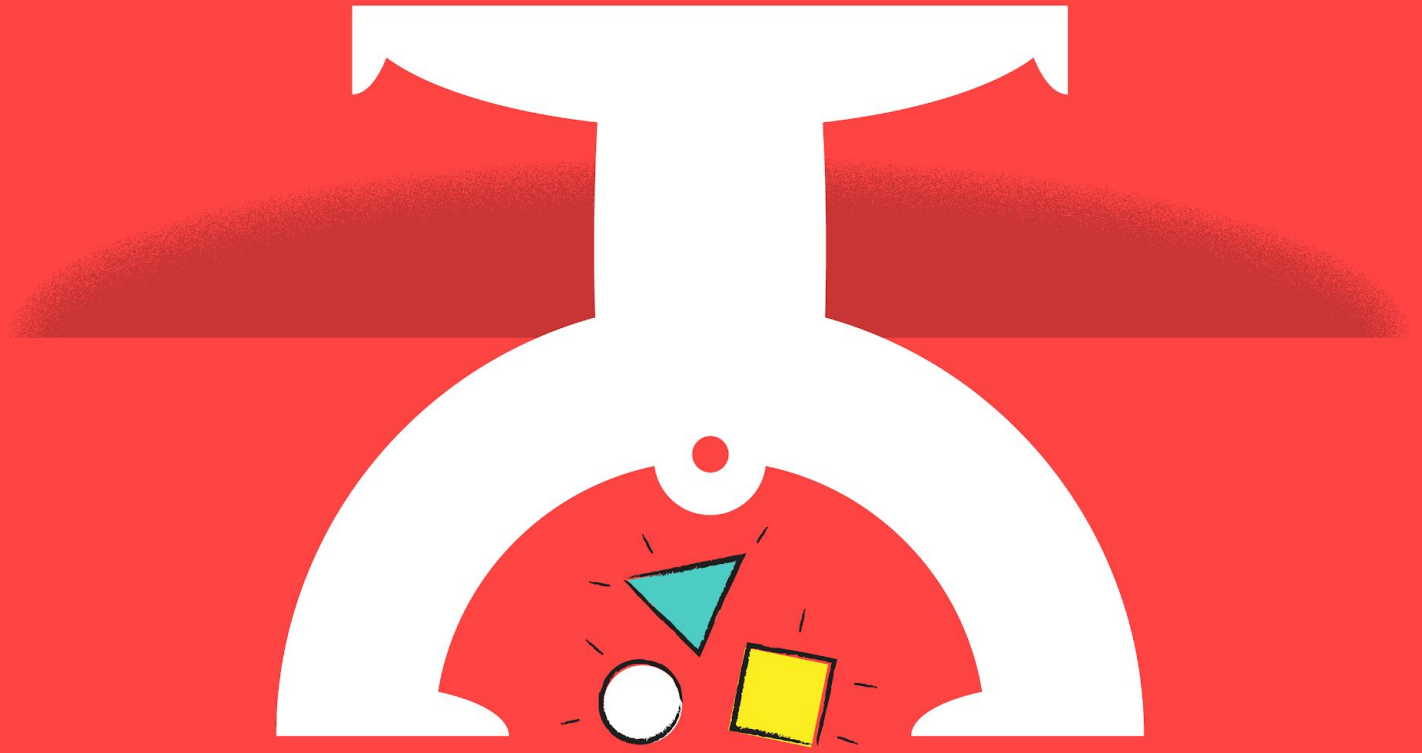

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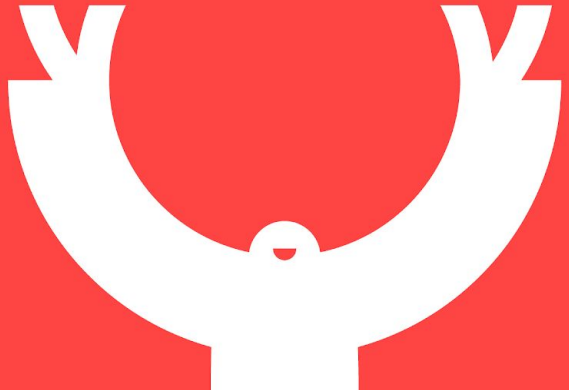

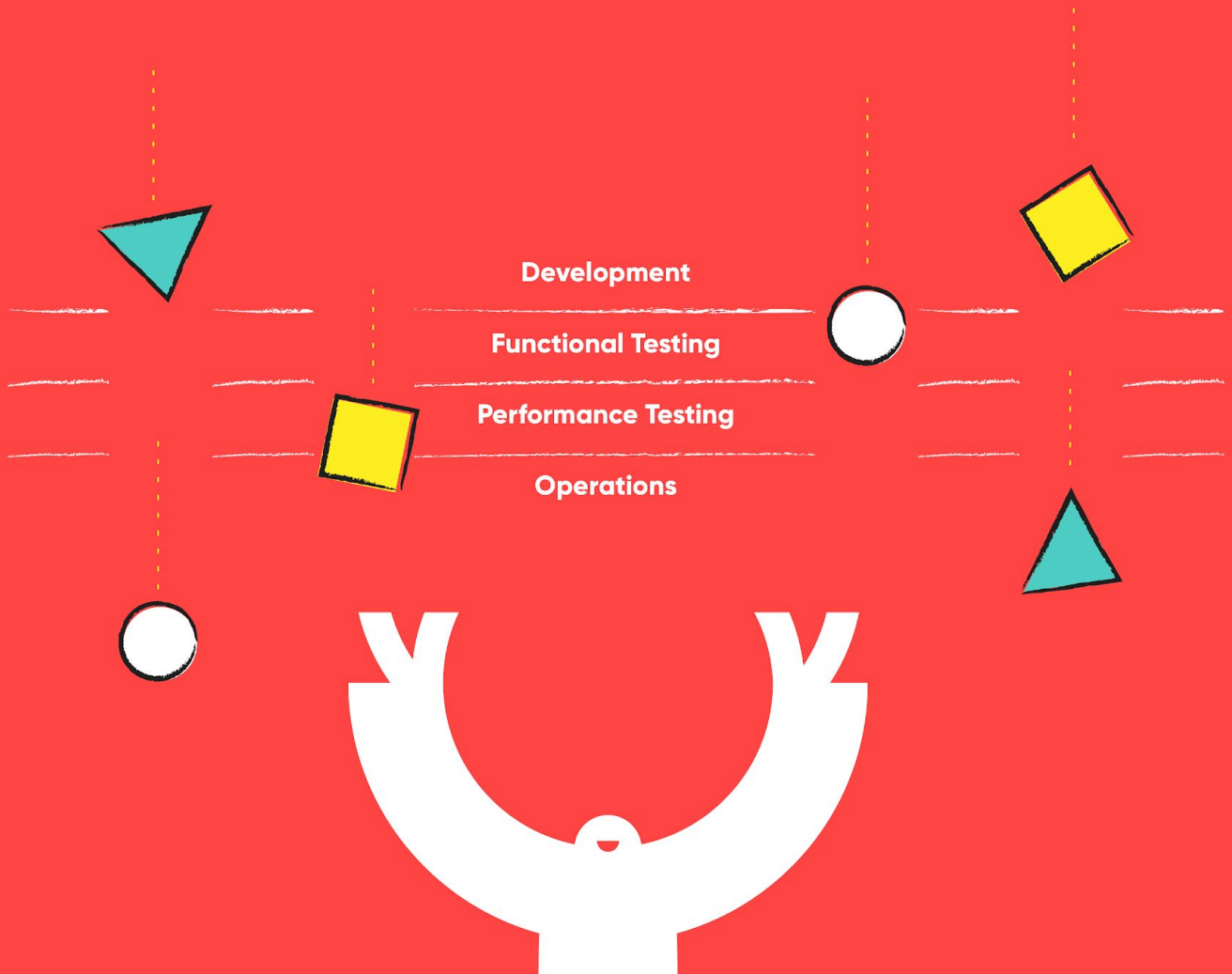
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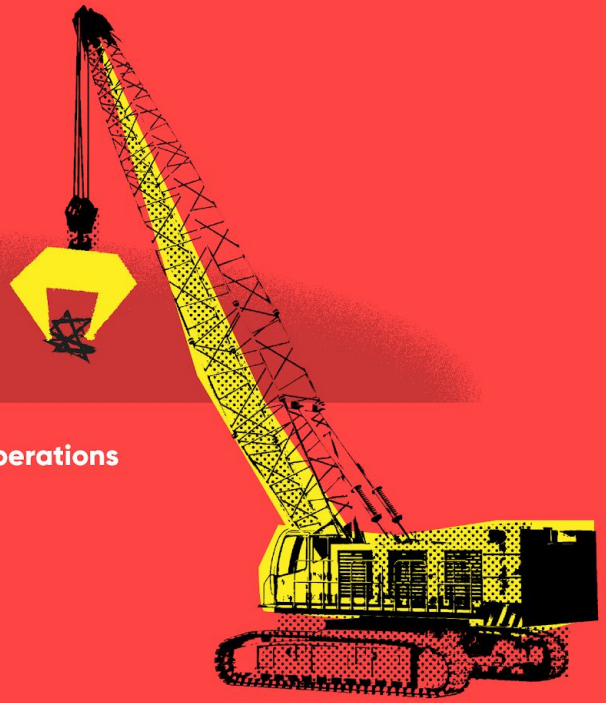


Performance oriented - Generative Culture

Ronald Westrum shows that a Generative Culture is predictive of higher safety outcomes. Generative Cultures have the following traits:

- High co-operation
- Messengers trained
- Risks are shared
- Bridging encouraged
- Failure leads to inquiry
- Novelty implemented

Westrum, Ron. (2014). The study of information flow: A personal journey. Safety Science. 67. 58–63. 10.1016/j.ssci.2014.01.009.

High performers

- **Deployment frequency = On demand (Multiple times per day)**
- **Lead time for changes = Less than 1 hour**
- **Mean Time to Recover = Less than 1 hour**
- **Change Failure Rate = 0% - 15%**

DevOps Research and Assessment (DORA) has found that for high performing IT organizations:

- correlate to Generative Cultures
- are twice as likely to exceed their profitability, market share and productivity goals
- achieved higher levels of throughput AND stability
- spend more time on new work / less on rework

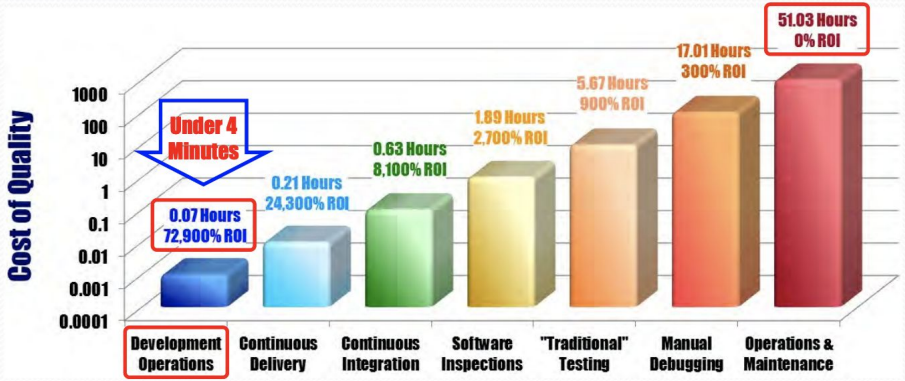
Also: IT performance is predictive of the performance of the organization as a whole.

Forsgren, N., J. Humble (2016). "DevOps: Profiles in ITSM Performance and Contributing Factors." In the Proceedings of the Western Decision Sciences Institute (WDSI) 2016, Las Vegas, NV.

DevOps—Cost of Quality

- Agile testing is orders-of-magnitude more efficient
- Based on millions of automated tests run in seconds
- One-touch auto-delivery to billions of global end-users

Activity	Def	CoQ	DevOps Economics	Hours	ROI
Development Operations	100	0.001	100 Defects x 70% Efficiency x 0.001 Hours	0.070	72,900%
Continuous Delivery	30	0.01	30 Defects x 70% Efficiency x 0.01 Hours	0.210	24,300%
Continuous Integration	9	0.1	9 Defects x 70% Efficiency x 0.1 Hours	0.630	8,100%
Software Inspections	3	1	2.7 Defects x 70% Efficiency x 1 Hours	1.890	2,700%
"Traditional" Testing	0.81	10	0.81 Defects x 70% Efficiency x 10 Hours	5.670	900%
Manual Debugging	0.243	100	0.243 Defects x 70% Efficiency x 100 Hours	17.010	300%
Operations & Maintenance	0.073	1,000	0.0729 Defects x 70% Efficiency x 1,000 Hours	51.030	n/a



4,500 x Faster than Code Inspections

Rico, D. F. (2016). *Devops cost of quality (CoQ): Phase-based defect removal model*. Retrieved May 10, 2016, from http://davidfrico.com

How do we start?
What will we see?

Branches live for less than a day before being merged

System health is monitored proactively

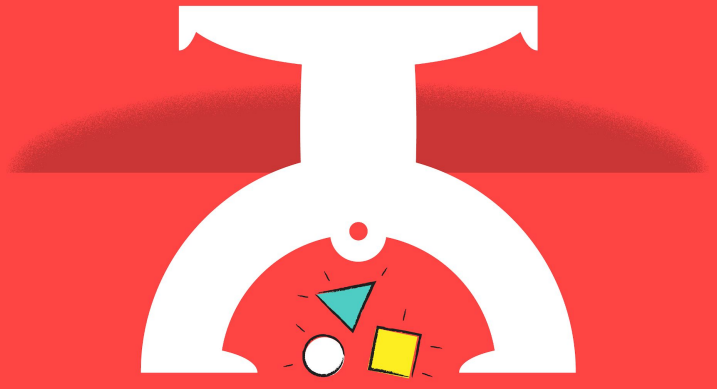
The majority of primary business value has test coverage and tests are run when code is committed

Work-in-progress limits are used to monitor and improve flow and throughput

Work is decomposed into small batches of less than a week’s effort

Test data is adequately available

The team has visibility into how their work is being received and is free to improve things based on that awareness



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