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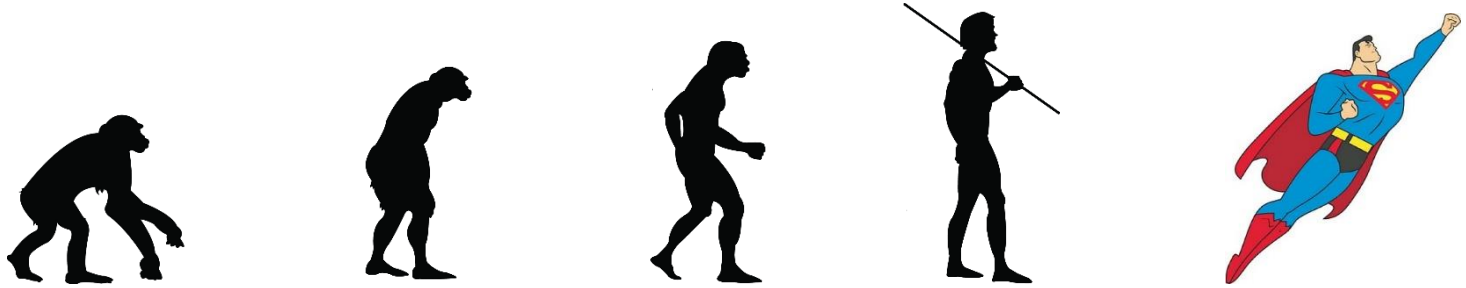
An Agile Survival Fight

Is Agile Testing just a byword for test automation?

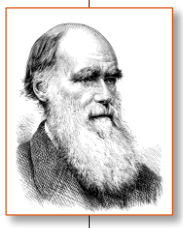
Ingo Philipp
Product Manager

#AustrianTestingBoard



eternally long | a little less | a lot less | shortish | close to zero

delivery cycle ti

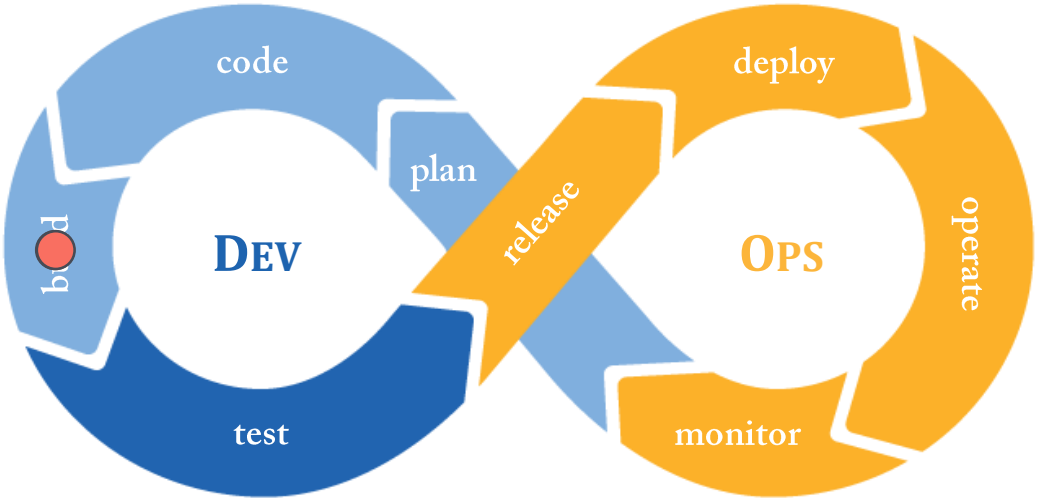


tomorrow!?

today

Collaborative Development

Continuous Release & Deployment



Continuous Feedback

Continuous Testing

Continuous Monitoring

DEVOPS

INSANE SPEED

Reality Check!?

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A MYRIAD OF
COMPONENTS

2200

2450

1807

3456

756

4178

2370

...

COUNTLESS INTERNAL/EXTERNAL
DEPENDENCIES

enterprise system landscapes are alike *disease gene networks*

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Conclusion!?

Automation

✓	A **natural** & **inevitable** consequence?
✗	...and so the sole **truth?**

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No, it's about being **efficient** & **effective**.

Is it just about **speed**?

Optimize

find the shortest possible path.

Automate

leave your shoes behind and drive.

Manage

keep the traffic lights green.

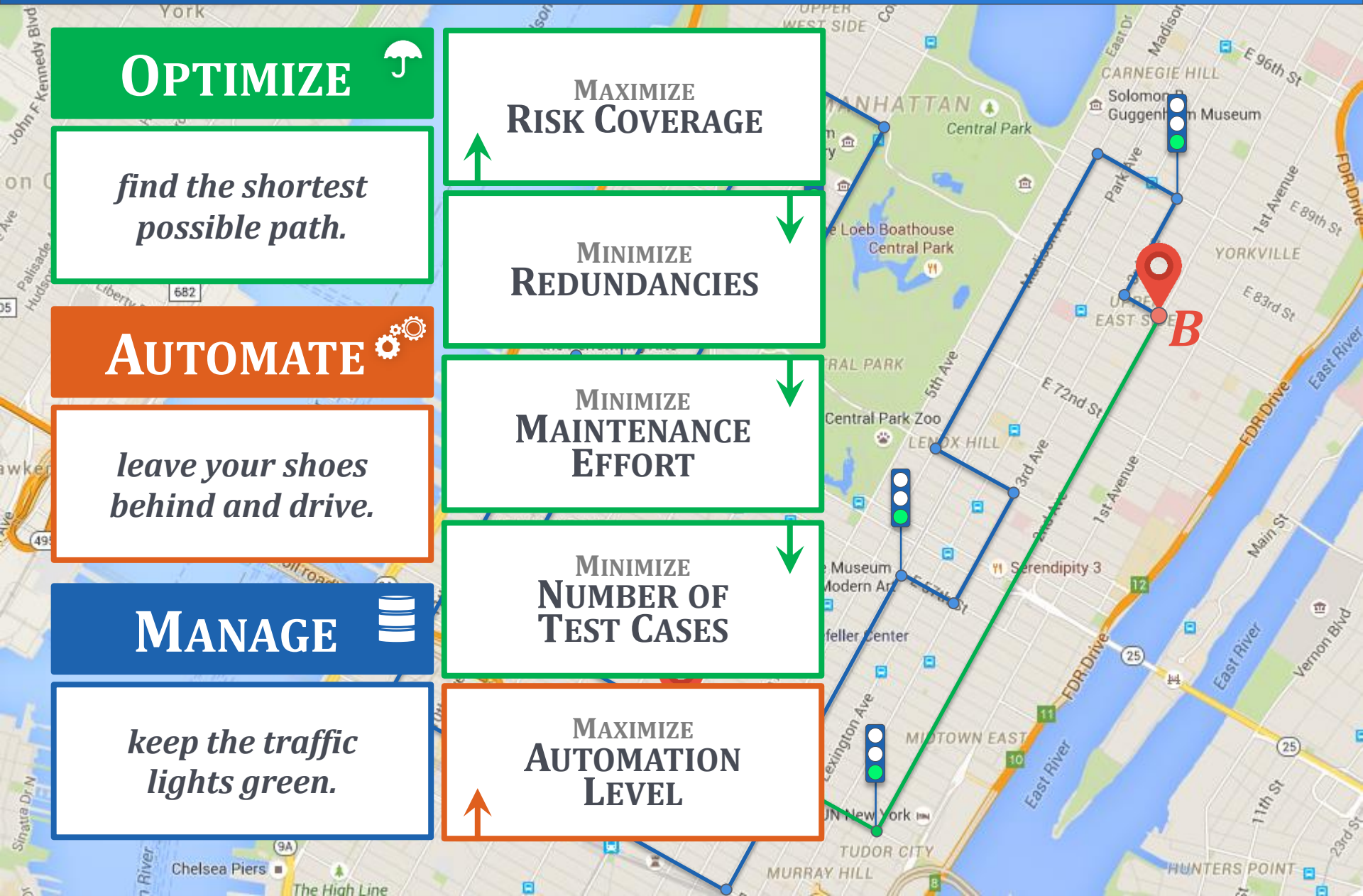
Maximize
Risk Coverage

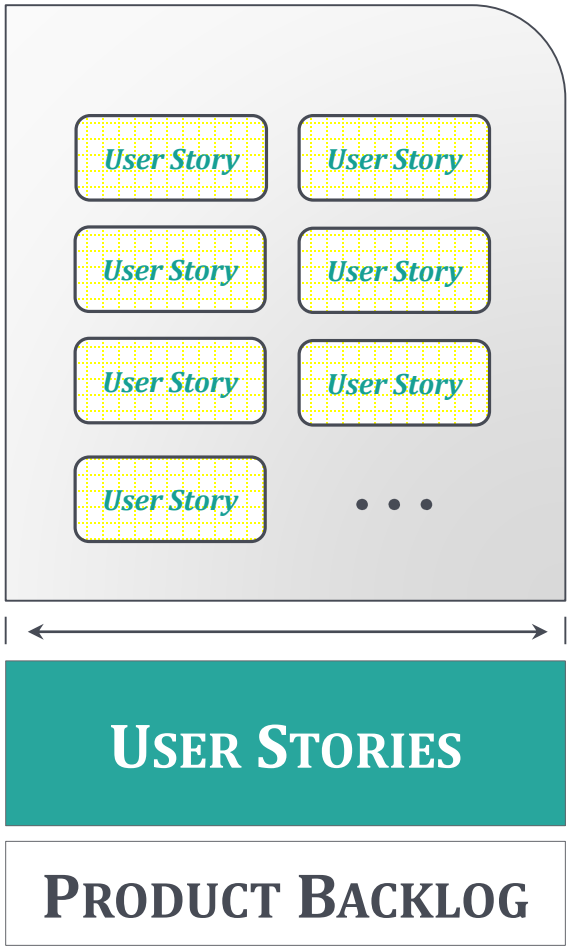
Minimize
Redundancies

Minimize
Maintenance Effort

Minimize
Number of Test Cases

Maximize
Automation Level





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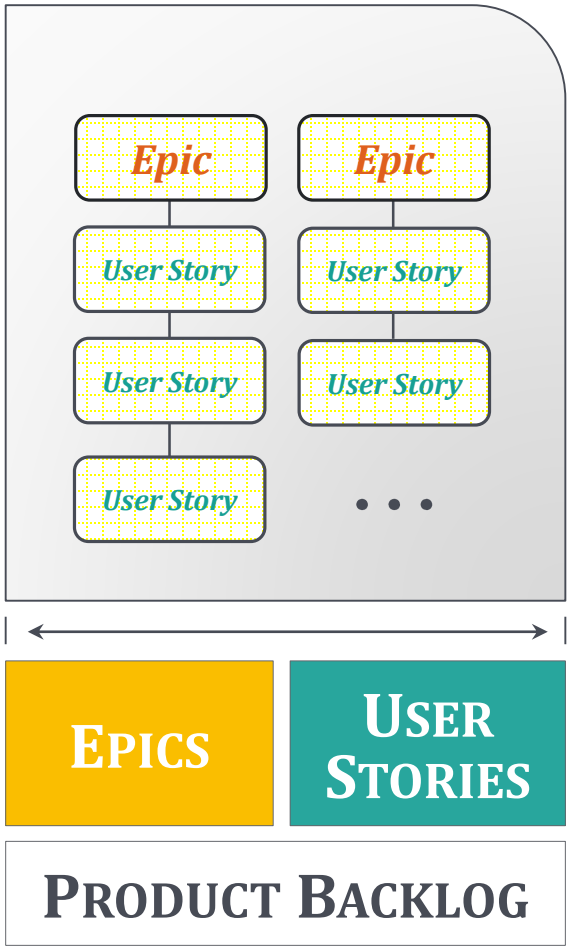

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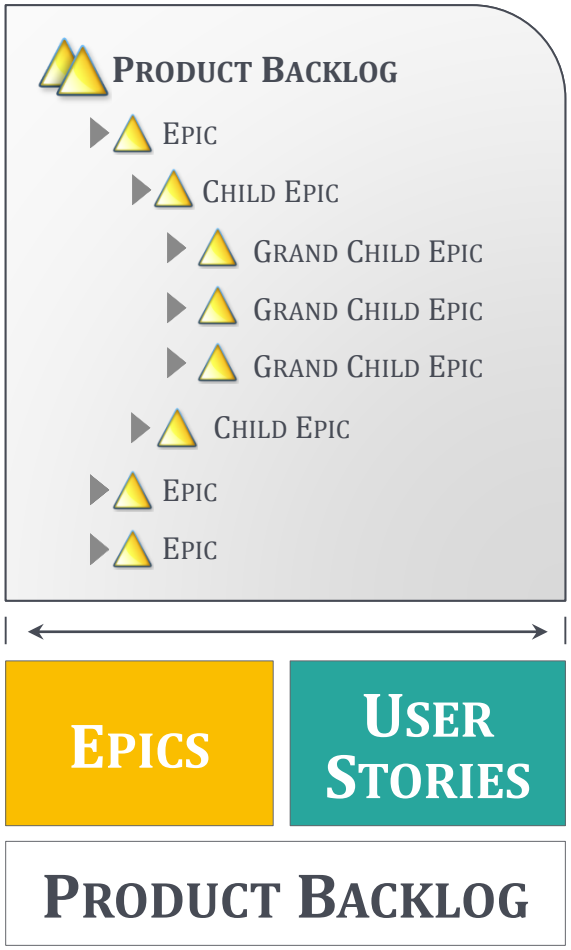

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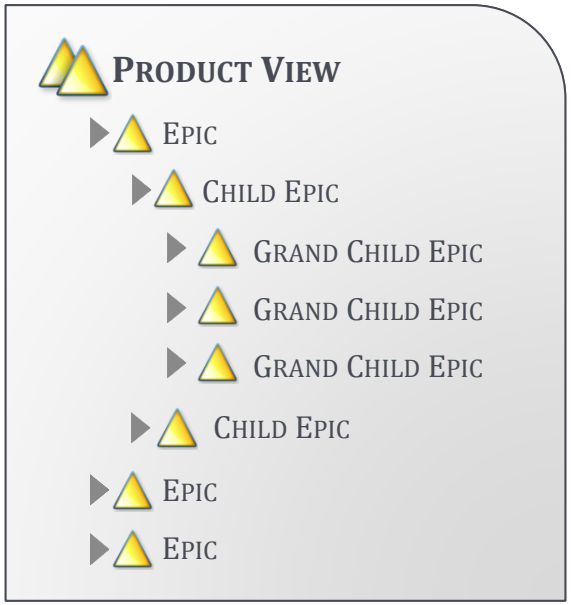

Epics

Product Backlog

User Stories

testable, measurable items

Sprint Backlogs

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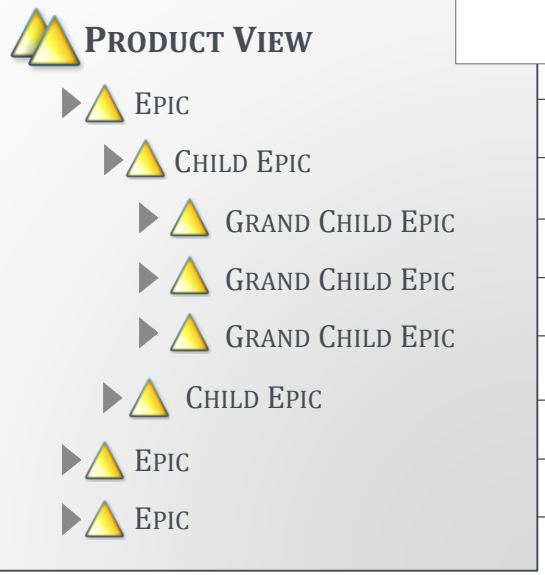
Customer Value

Risk Contribution

Risk Coverage

[%]



Risk Contribution	Risk Coverage			
	41	6	9	45
80%	39	12	18	31
26%	60	2	6	32
3%	18	22	30	30
3%	33	17	50	
20%	100			
54%	25	25	40	10
10%	34	16	50	
10%	42	21	37	

...test coverage** is shifted to **risk coverage!

Epics

Product Backlog

traceability relationships

User Stories

testable, measurable items

Sprint Backlogs

*...to **measure** is to know, i.e. if you can't measure it, you can't **improve** it.*

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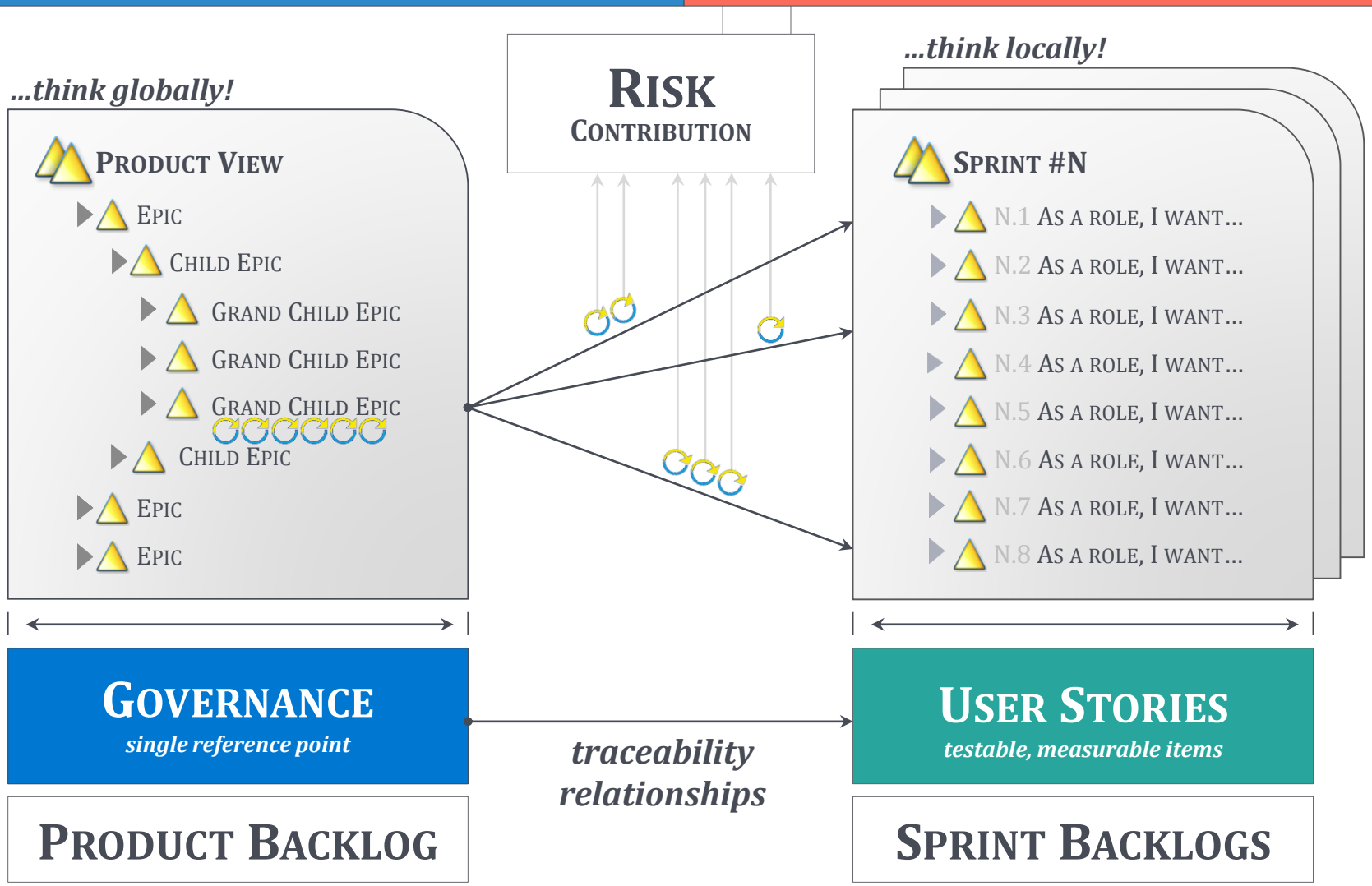
Automatic Clean Up

consistent, up-to-date & easy-to-maintain portfolio

Risk-Based Approach

extended to test case level



*...to **measure** is to know, i.e. if you can't measure it, you can't **improve** it.*

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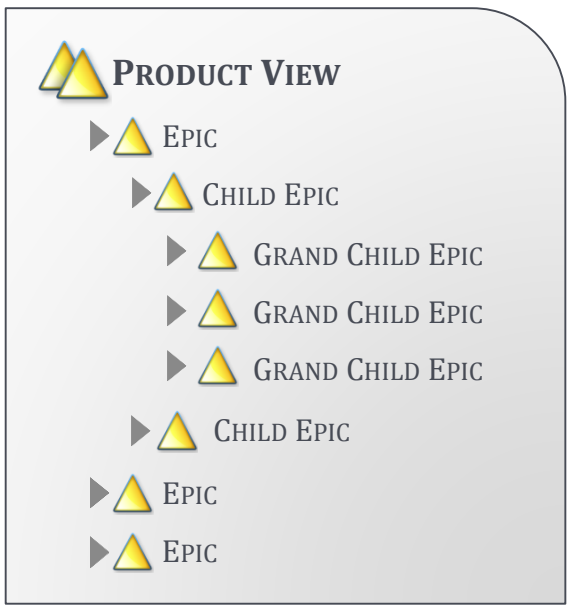
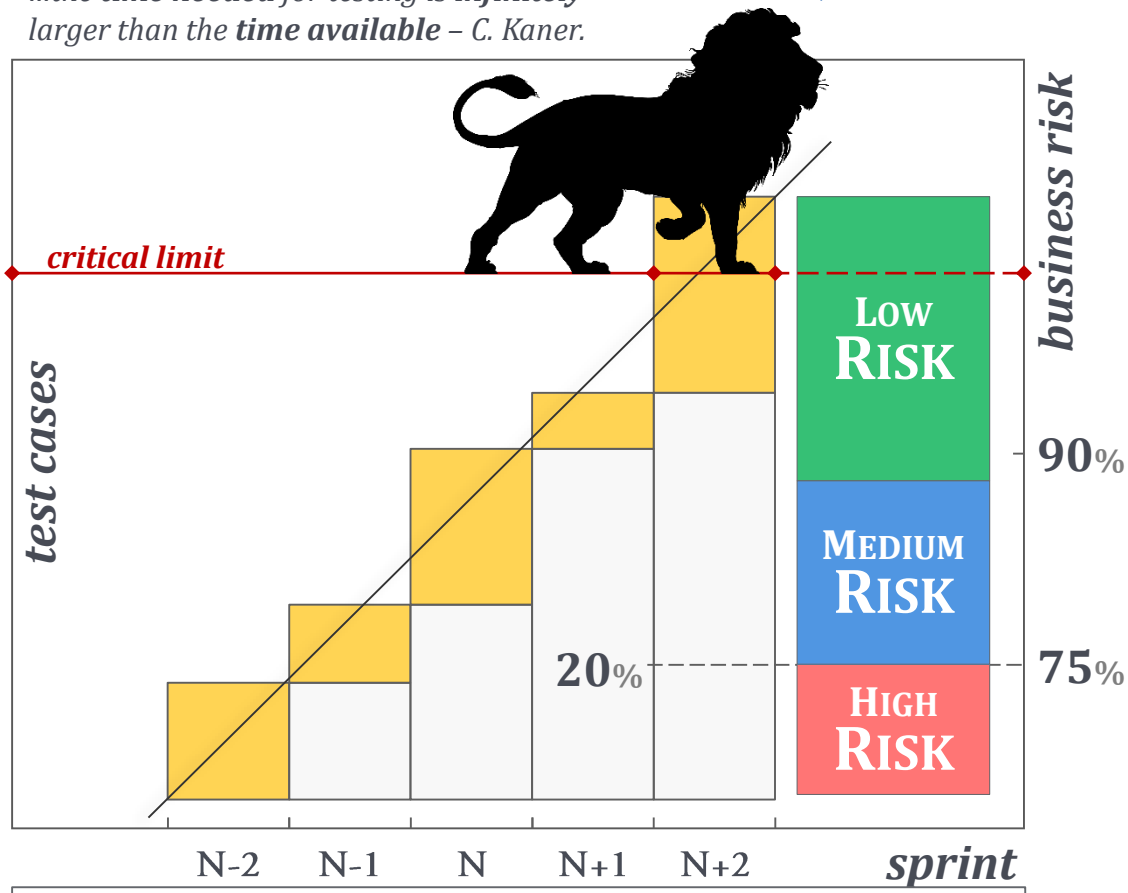
*...the **time needed** for testing is **infinitely** larger than the **time available** – C. Kaner.*





GOVERNANCE
single reference point

PRODUCT BACKLOG

taming the
UNTAMEABLE

*...to **measure** is to know, i.e. if you can't measure it, you can't **improve** it.*

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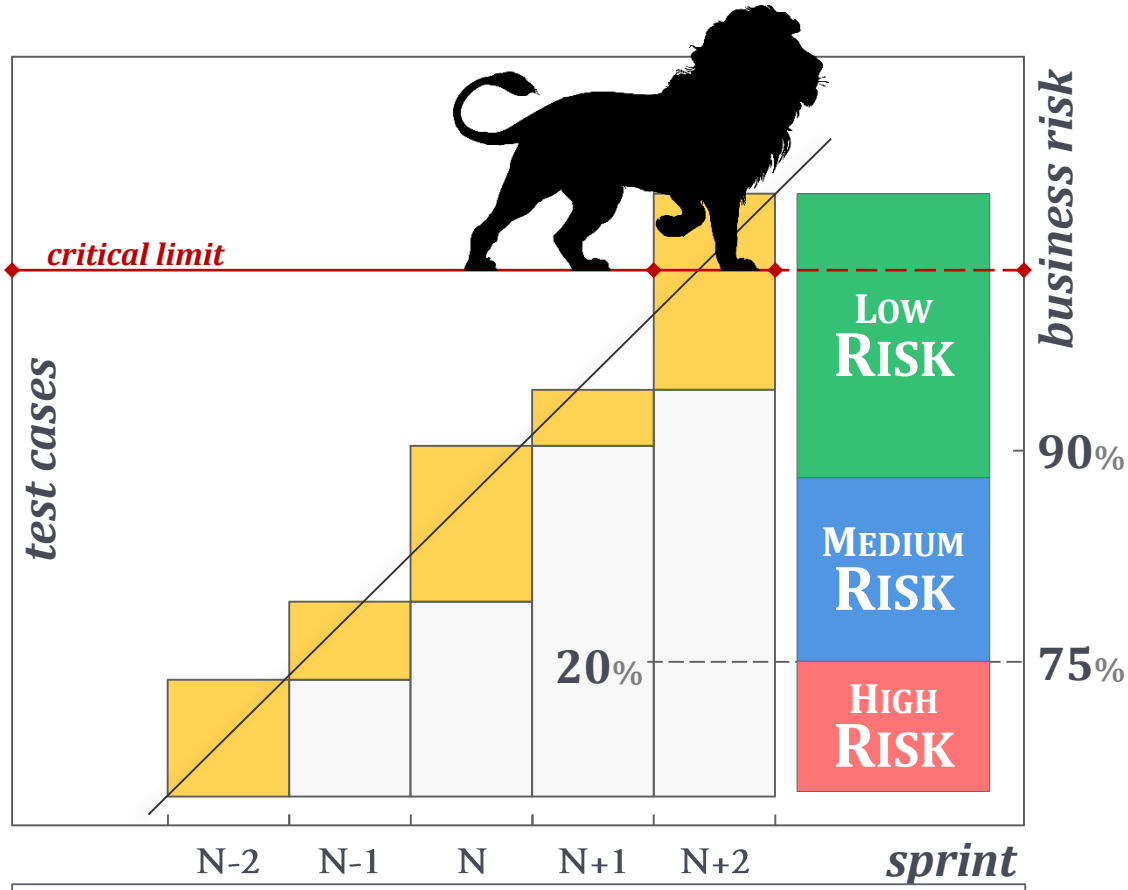
a simple **agile logic**,
seeing it **black** and **white**.

Forget **manual** testing,
go for **automated** testing.

Forget **manual** test **design**,
go for **automated** test **design**.



YES

NO

taming the
UNTAMEABLE

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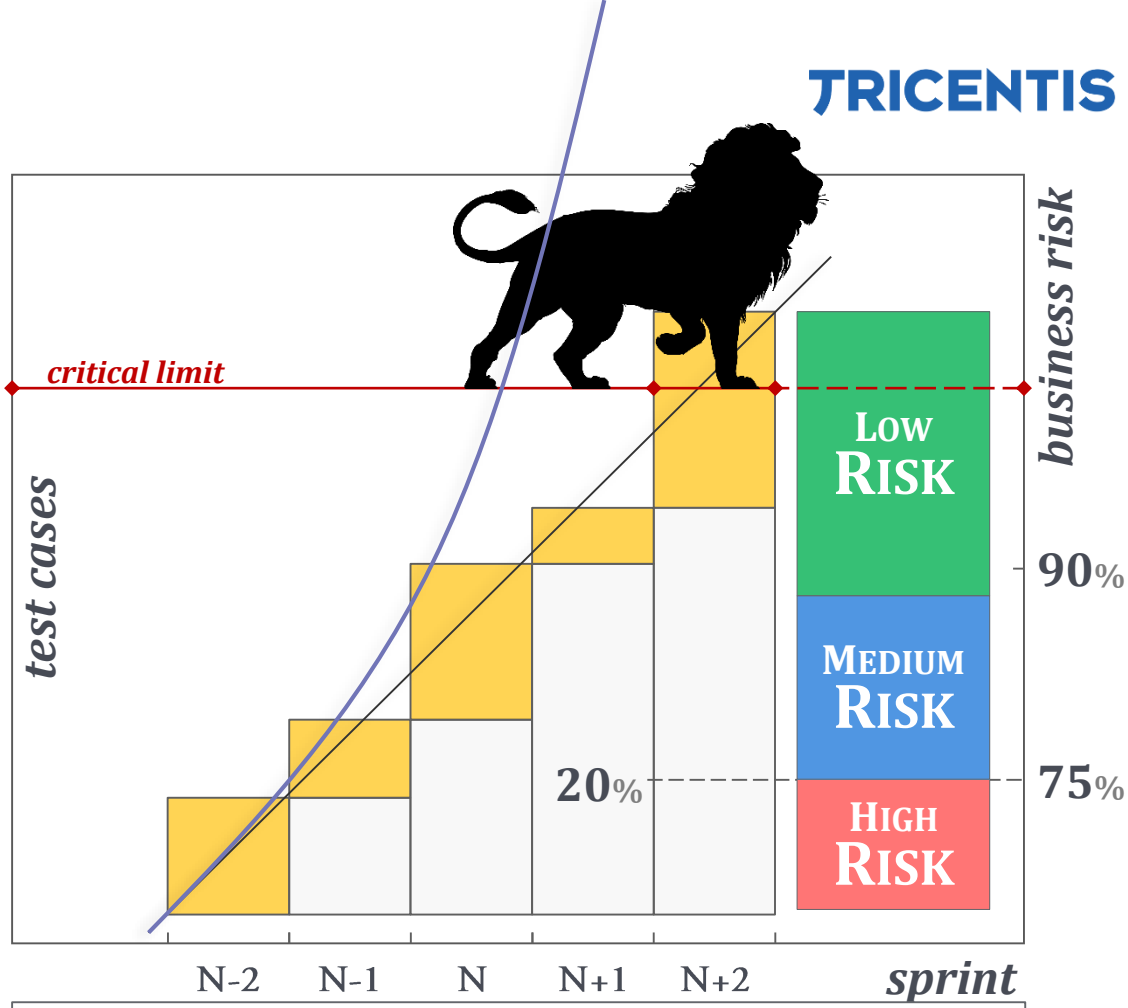
Combinatorial Explosion



YES

NO

taming the

Untameable

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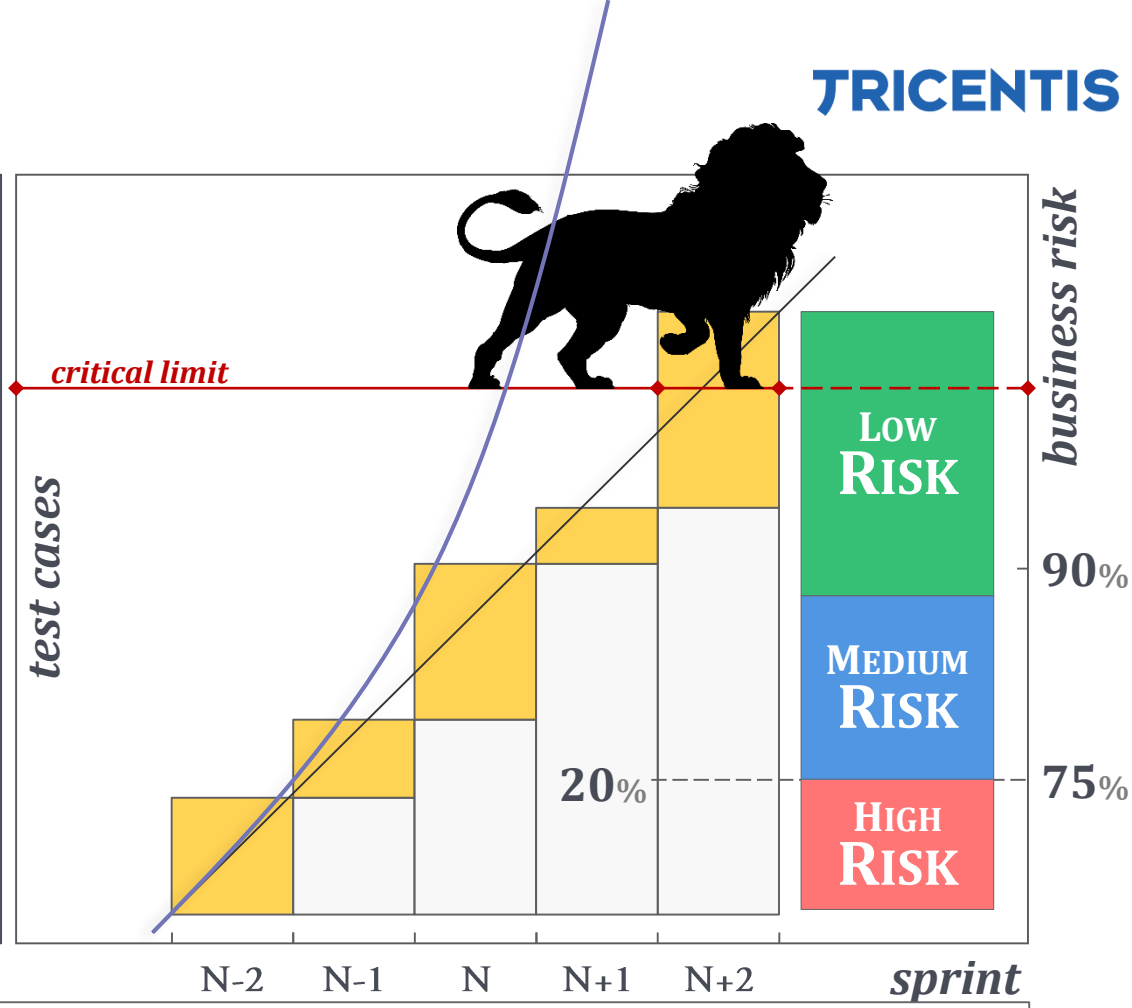
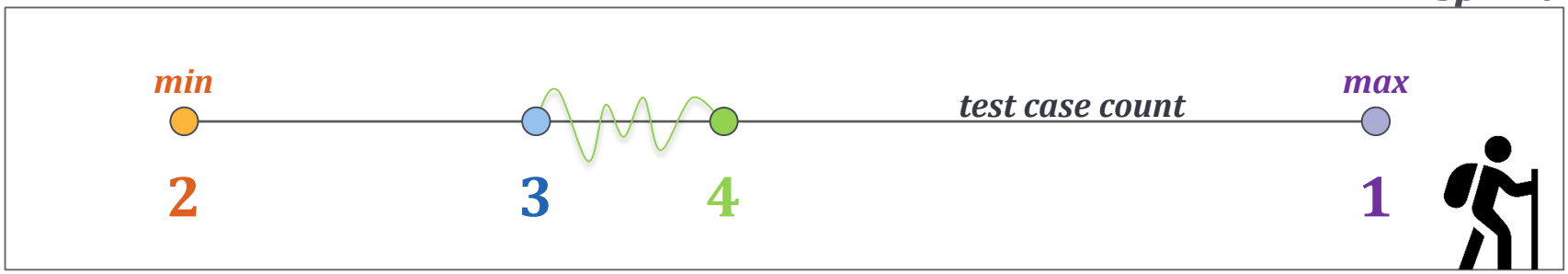
Combinatorial Explosion





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Business Order

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Create Order

3

	#	Case #1	Case #2	...	Case #148	Case #2100
Trading Place	14	T013	T007		T007	T004
Asset Class	15	A015	A001		A005	A070
Counterparty	5	C005	C001		C003	C004
Market Type	2	M001	M002	...	M002	M001
Test Cases	2100					

ALL COMBINATIONS

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Business Order

Start → End

Create Client	Create Security	Create Order	Calculate Fees	Rectify Order	Cancel Order
1	2	3	4	5	6
290	2450	2100	1380	1200	650

$\sim 10^{18}$

GAZILLIONS OF TEST CASES

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Conclusion!?

That's not even an **option**.

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Combinatorial Depression

Step 2

	#	Case #1	Case #2	...	Case #14	Case #15
Trading Place	14	T001	T002		T014	T001
Asset Class	15	A001	A002	...	A014	A015
Counterparty	5	C001	C002		C004	C005
Market Type	2	M001	M002	...	M002	M001
Test Cases	15					

The Global Minimum

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Conclusion!?

minimal number of test cases.

test objective is unknown.

enormous **maintenance** problems.

false statements about **risk contribution**.

root cause analysis is a herculean task.

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Combinatorial Contraction

Step 3

	#	Case #1	Case #2	...	Case #32	Case #33
Trading Place	14	T007	T008		T007	T007
Asset Class	15	A014	A014		A005	A014
Counterparty	5	C003	C003		C003	C001
Market Type	2	M002	M002	...	M002	M002
Test Cases	33					

Linear Expansion

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Conclusion!?

slightly more **test cases**.

each test case pursues a **unique** & **well-defined** goal.

root cause analysis is an easy task.

strongly supports **changeability** & **maintainability**.

enables to derive **risk contribution**.

independent parameters?
...that's beyond any belief, it's a **continuous misbelief**.

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~19% ±4

Create Order

3

	#	Case #1	...	🗑	Case #34	Case #35	
		LINEAR EXPANSION			DEPENDENCIES		...
Trading Place	14	T007		T007	T008	T007	
Asset Class	15	A014		A014	A005	A011	
Counterparty	5	C003		C001	C003	C004	
Market Type	2	M002	...	M002	M002	M001	...
Test Cases	±33						
	CUSTOMIZED LINEAR EXPANSION						

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dependencies continuously break any combinatorial logic.

..hence, say **what** has to be tested, and **why** it has to be tested.

- Link **test cases** and **business rules** to make the leak in **risk coverage** visible on test case level.
- **Reproduce** the entire test case generation process **automatically** by tracing back the **origin** of test cases.
- Avoid the creation of **meaningless** test cases, and so any **manual postprocessing** (clean-up).
- Provide a **living documentation** by capturing **behaviors**, that enables **test driven development**.

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Reality Check!?

@Australian Bank, CBA Group Member

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*remodeling **traditional** approaches for greater **agility**.*

	Test Cases	Risk Coverage	Run Time
Start	2200	30%	8 Weeks
Optimize *value-based* **Test Cases**	600	85%	5 Weeks
Manage *synthetic* **Test Data**		**Integrate**	2 Weeks
Automate *model-based test* **Automation**	87% *automation level*	2 Hours *smoke testing*	2 Days *regression testing*

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GAZILLION THANKS

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