

Operational Loops

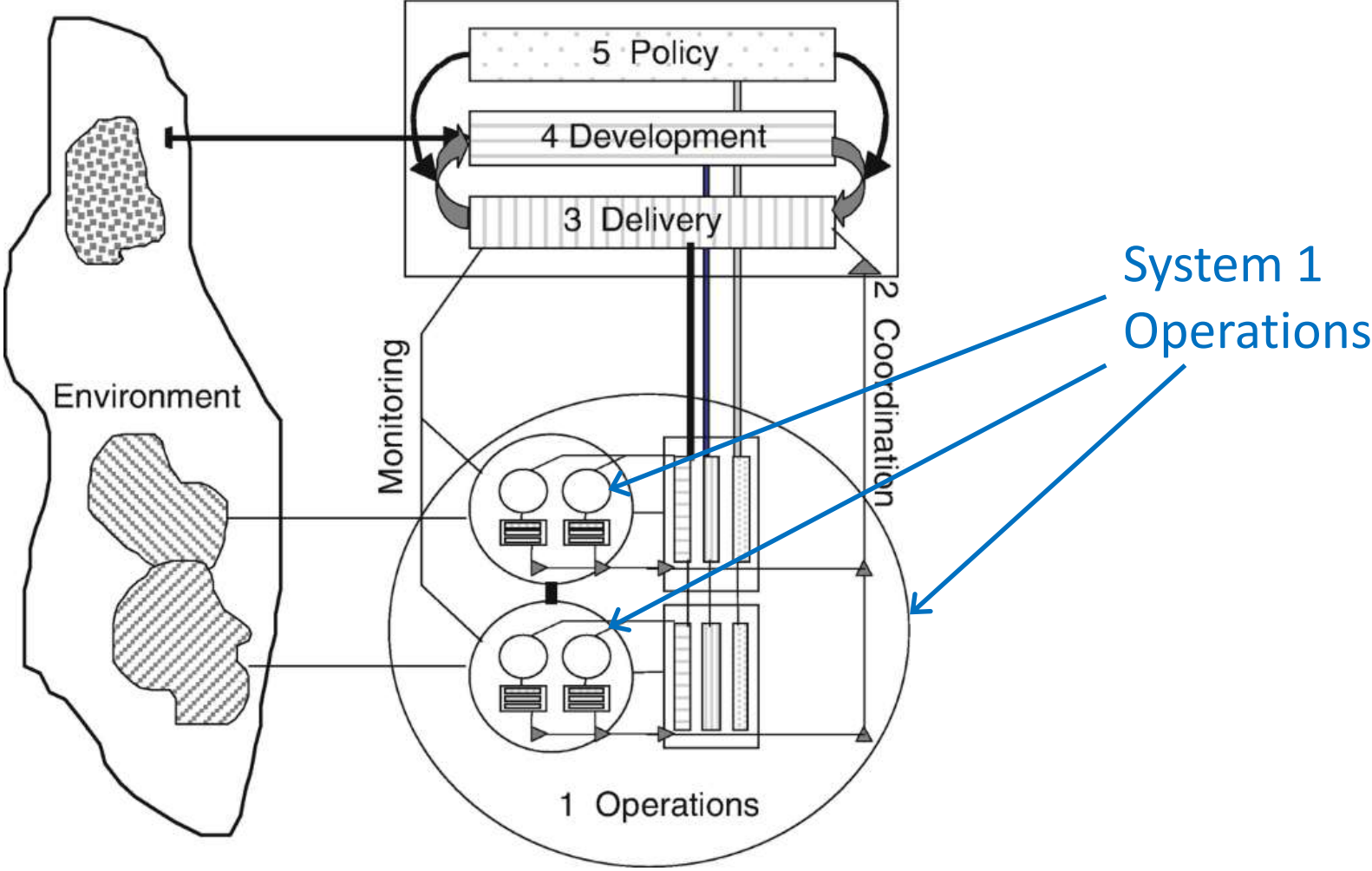
Steve Hales

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- The viable system model - operational loops
- Operational loops in IT Service Management
- Operational loops in car repair
- Operational loops in healthcare
- Patterns



The Viable System Model



Operations

Stafford Beer's Muddy Box

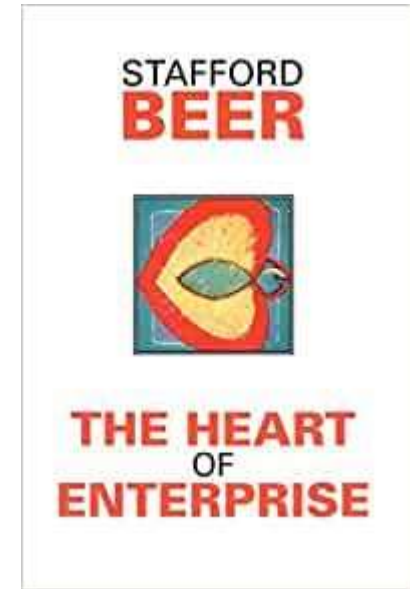
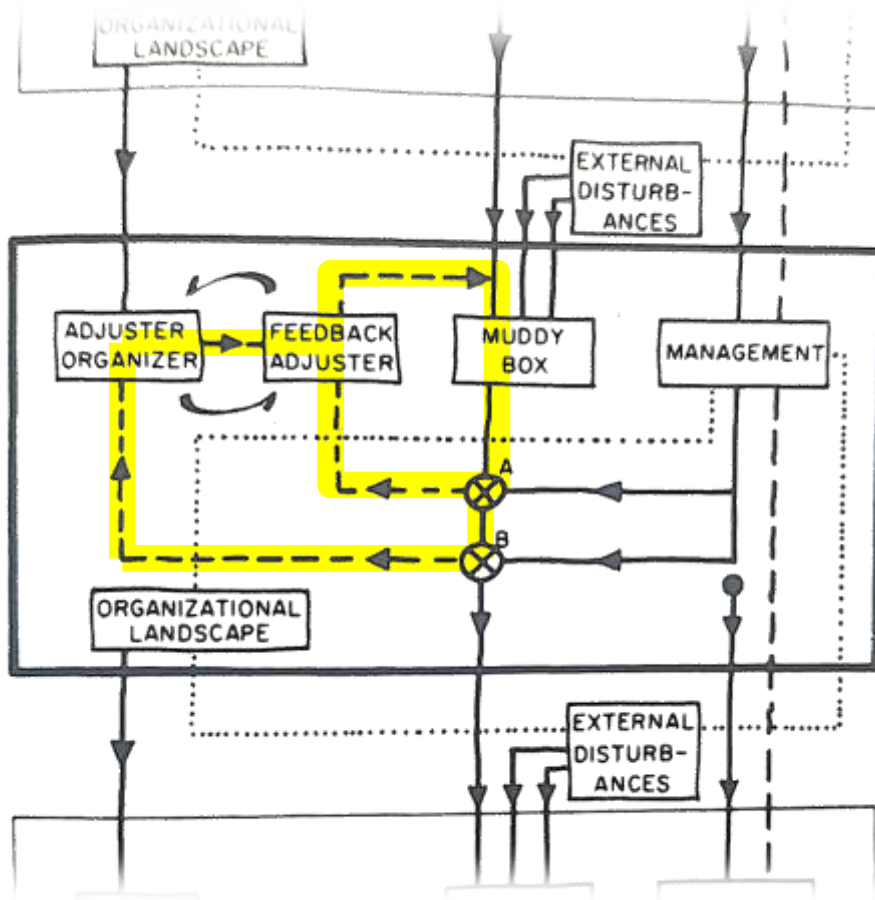
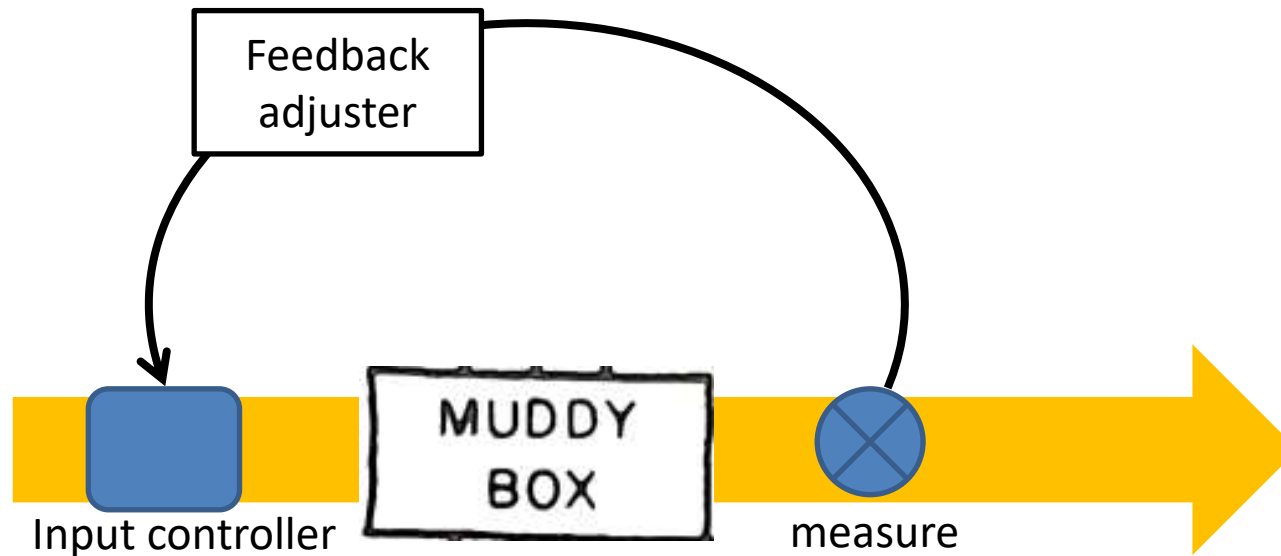


Figure 17, p71

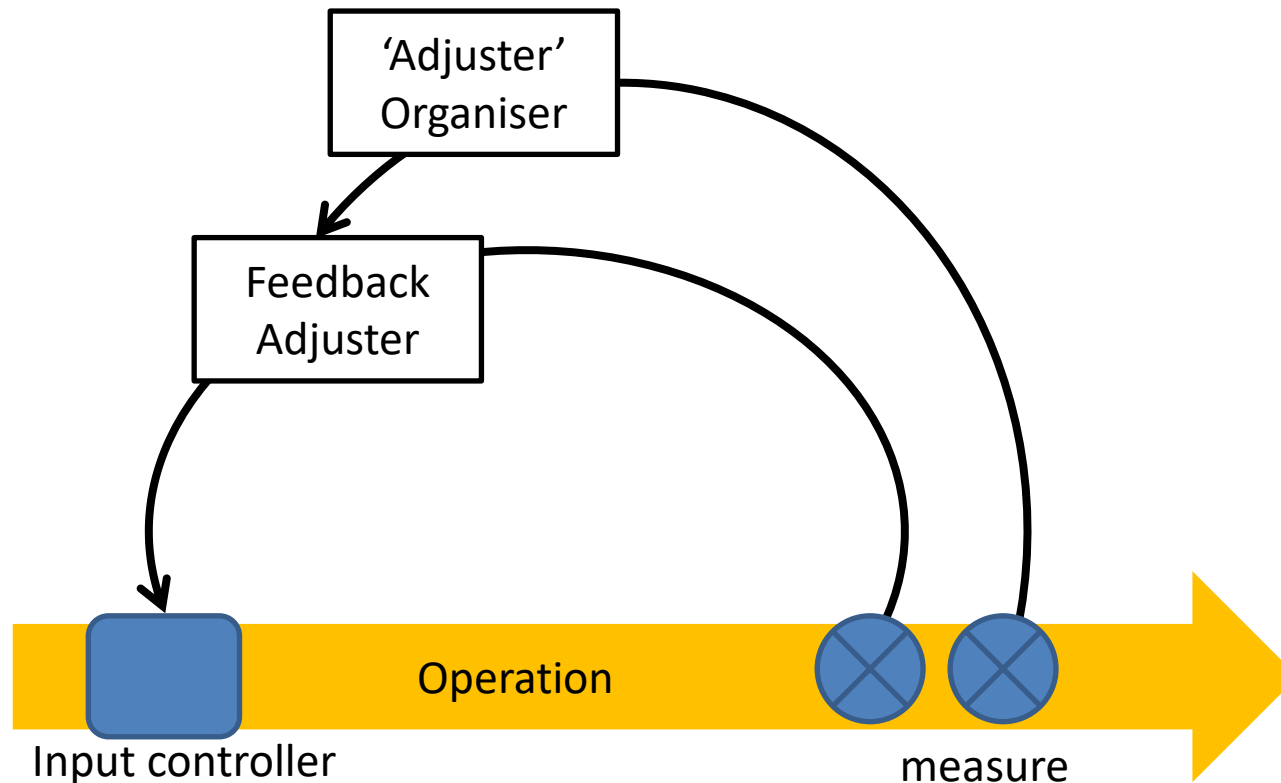
The stability loop

e.g.
a house thermostat
regulating
temperature



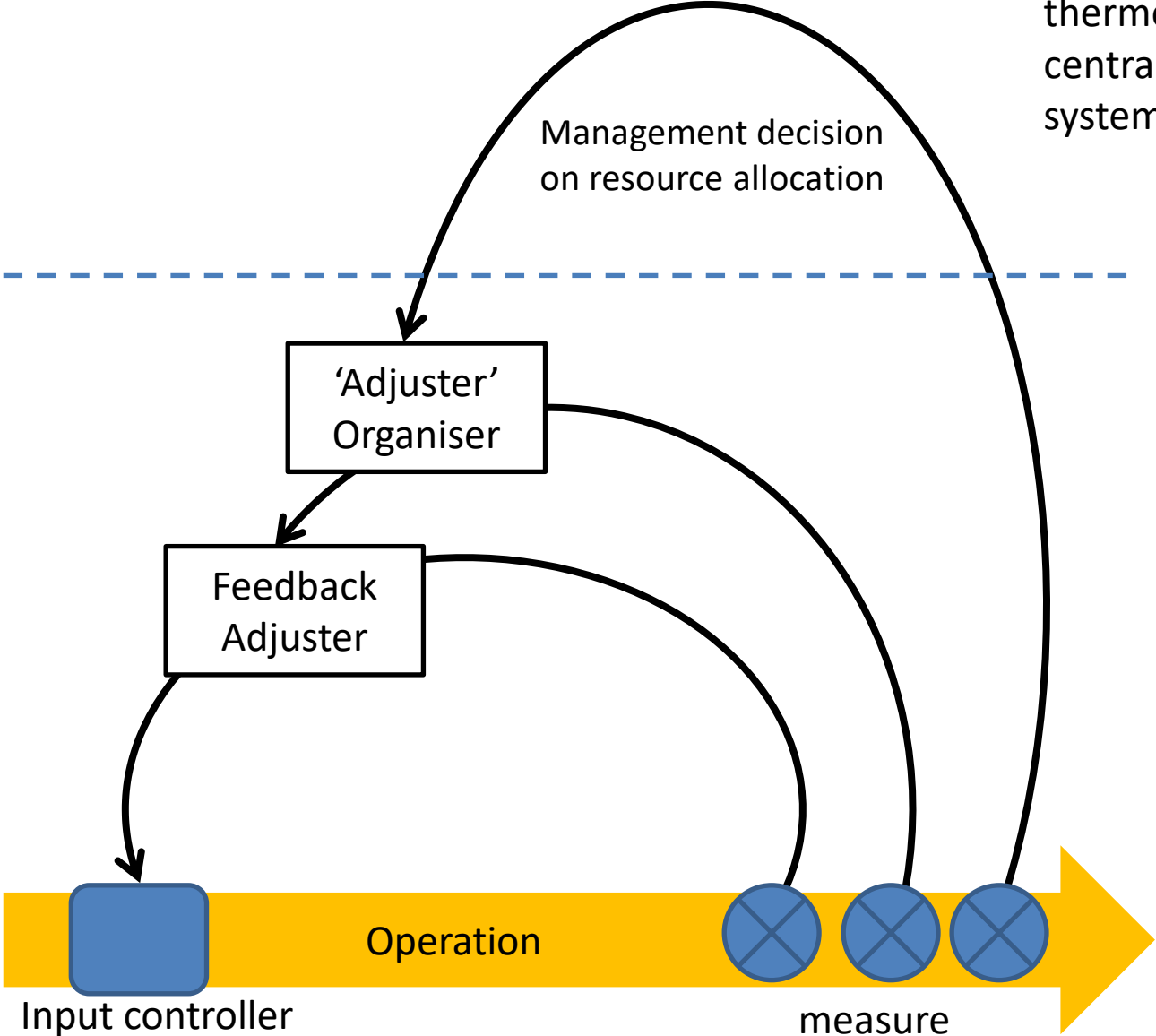
The adaptability loop

e.g.
Resetting the desired
temperature on a
house thermostat for
greater comfort

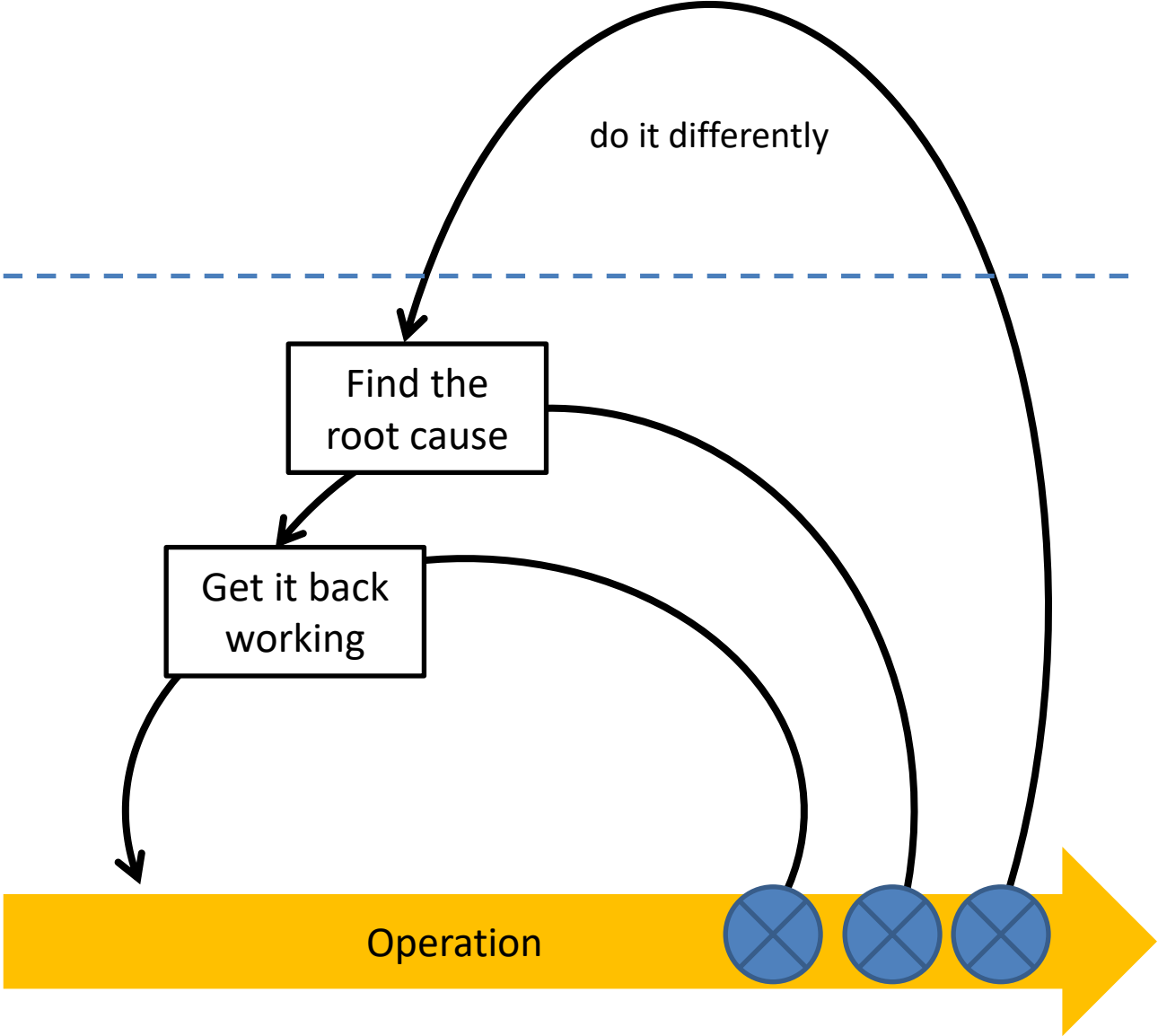


The transformation loop

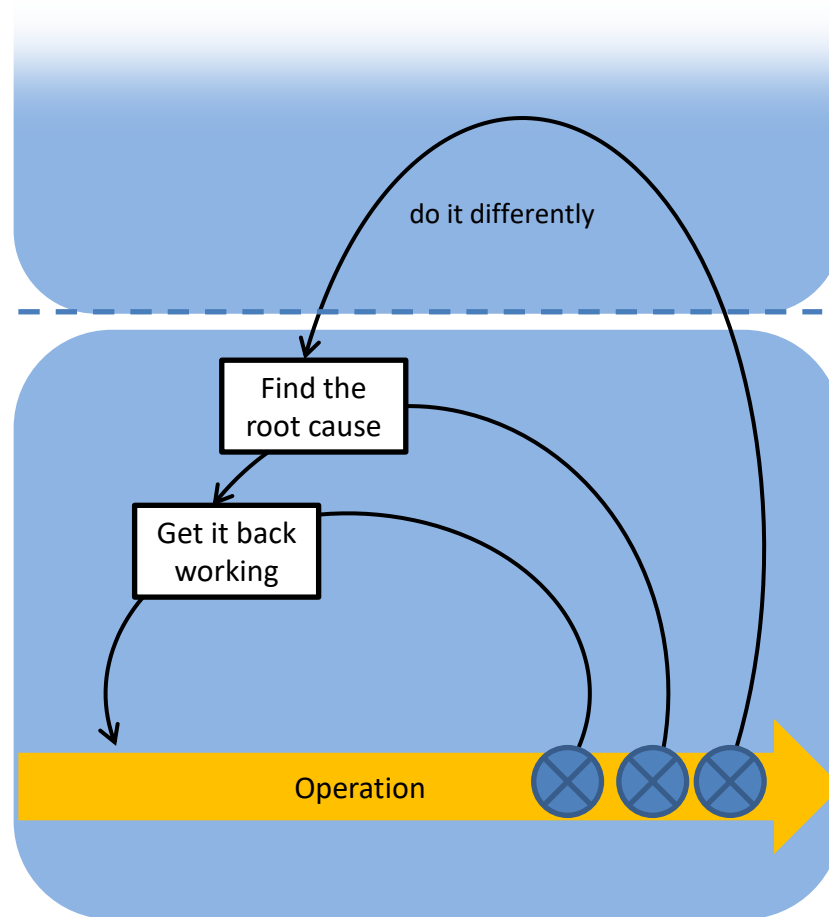
e.g.
Replacing the
thermostat or
central heating
system



The transformation loop



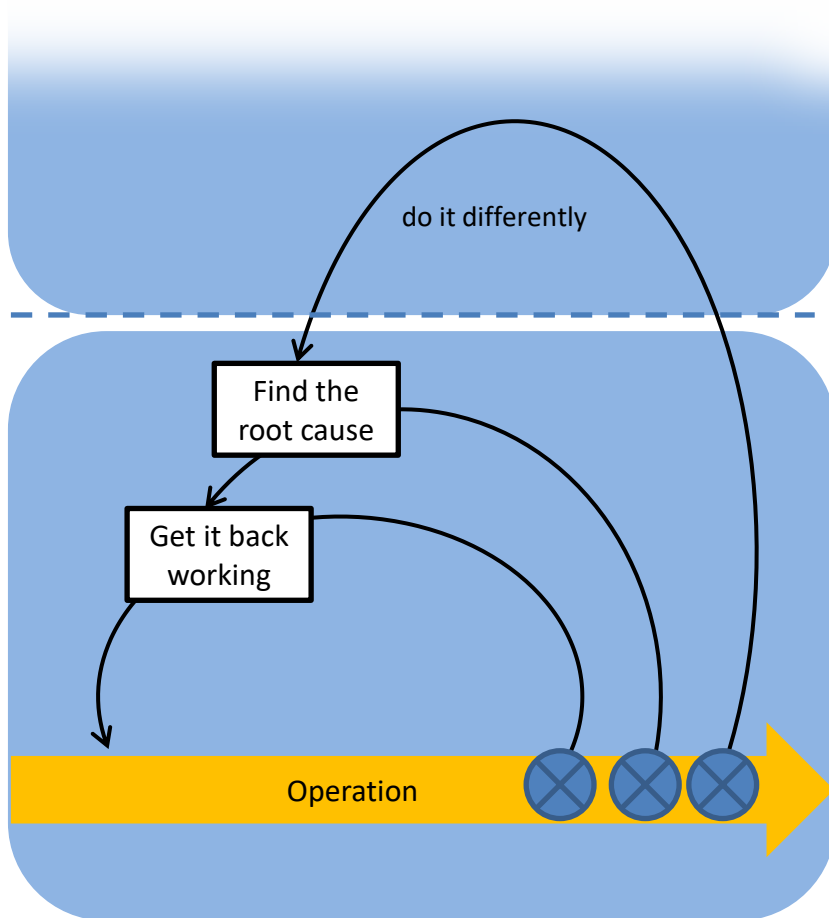
Loops in manufacture



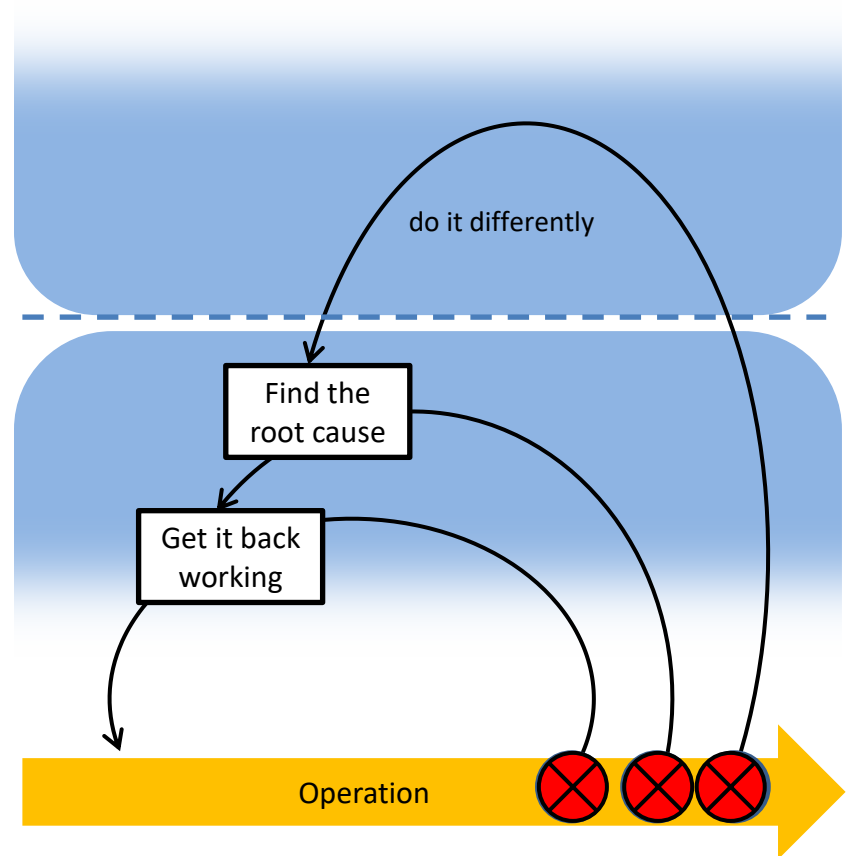
Loops in service support

User
→

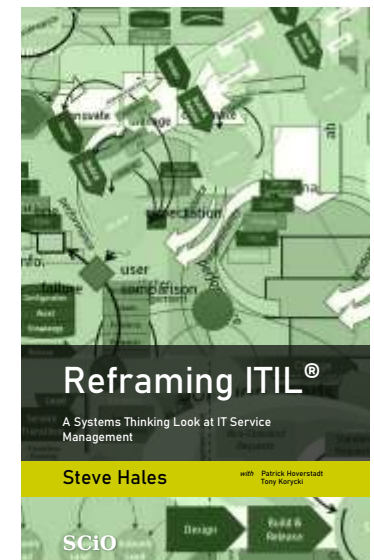
Development / Manufacture



Use/Service

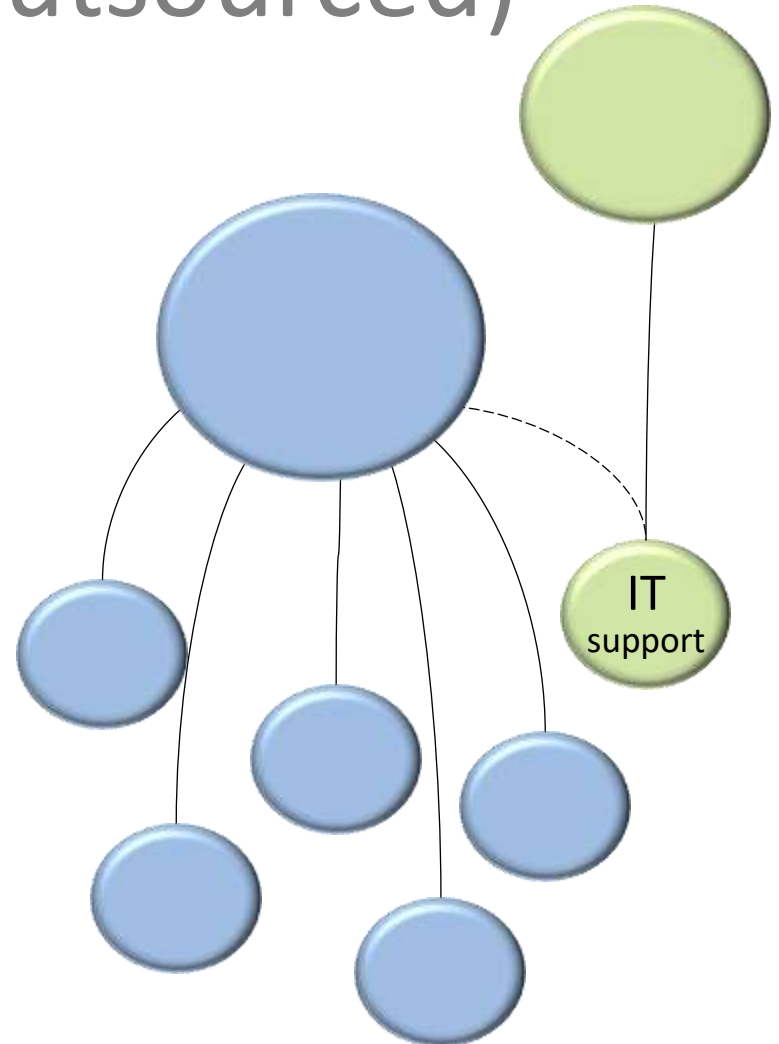


IT SERVICE SUPPORT



IT Service Support (outsourced)

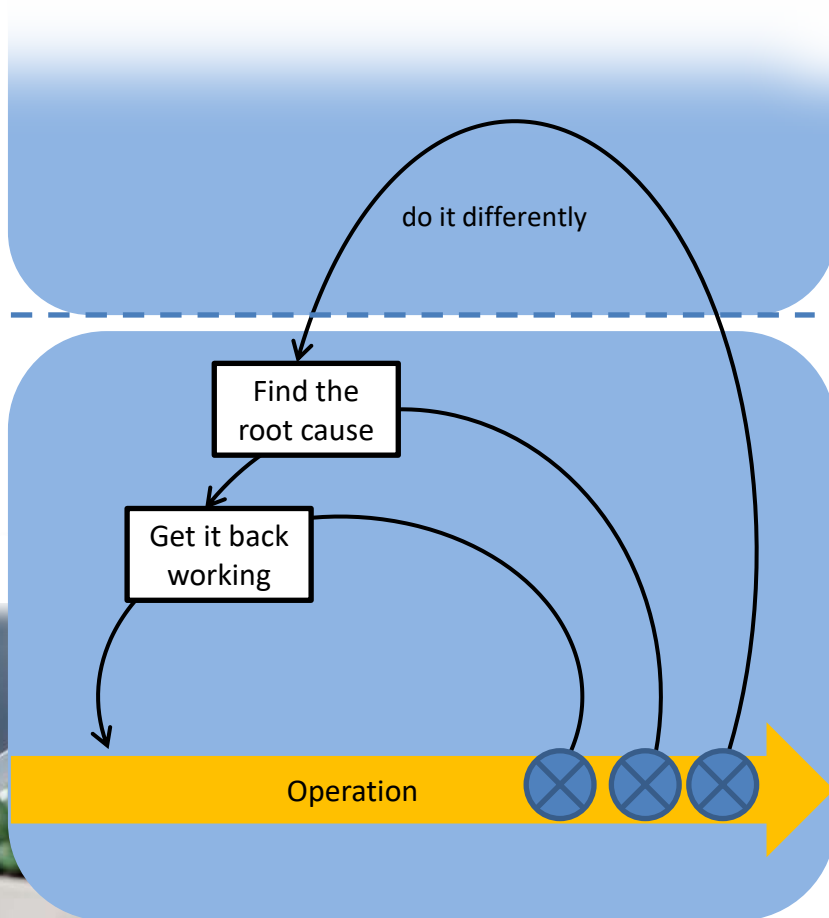
80%  TATA CONSULTANCY SERVICES	77%  Computacenter	77%  Getronics	74%  Cognizant	73%  Capgemini
73%  hp	73%  Atos	73%  Infosys	73%  NIIT Technologies	73%  SCC
71%  Telefonica	71%  sopra steria	71%  CSC	70%  Tech Mahindra	69%  accenture
69%  WIPRO	69%  CGI	68%  vodafone	66%  IBM	65%  verizon
64%  CAPITA	61%  at&t	61%  HCL	61%  FUJITSU	58%  T-Systems



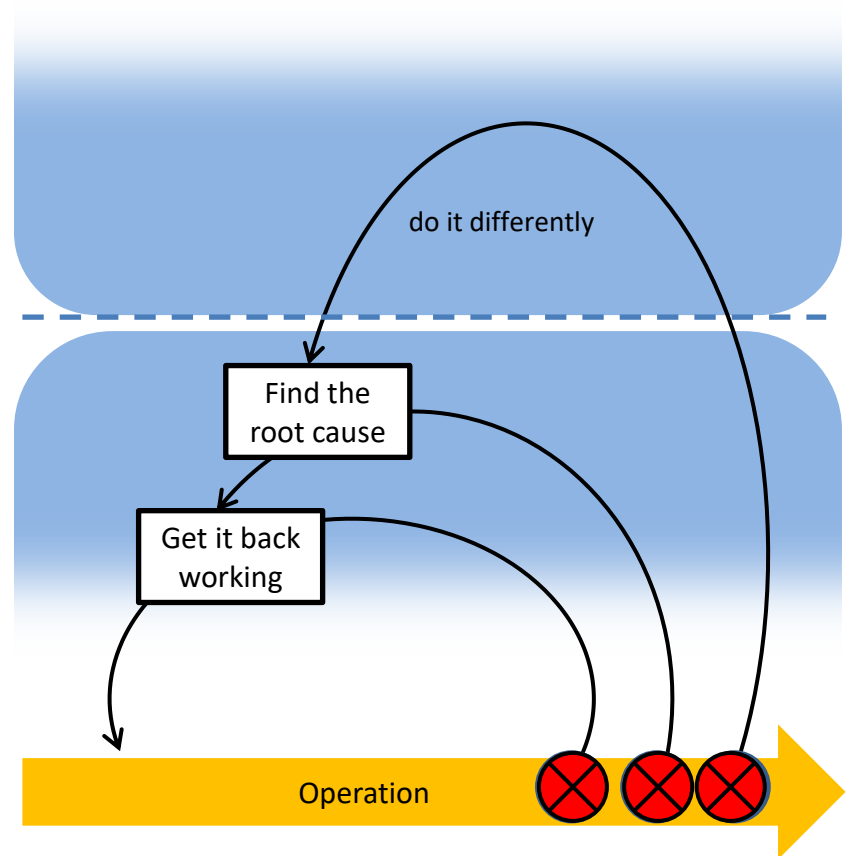
Loops in service support

User
→

Development / Manufacture



Use/Service

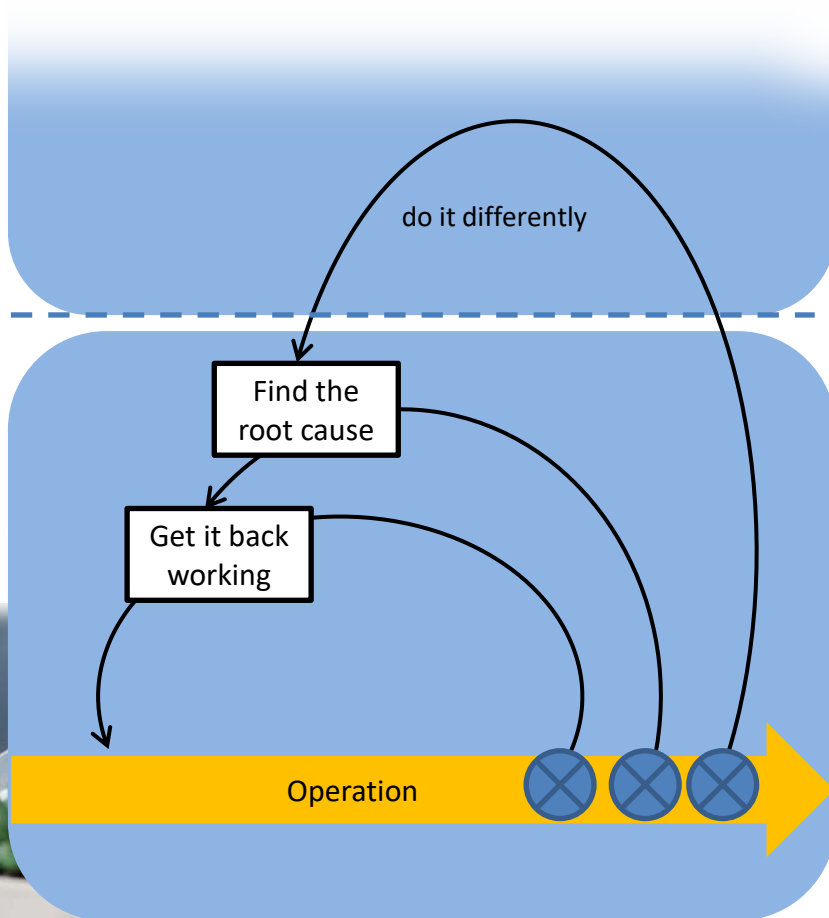


ITaaS

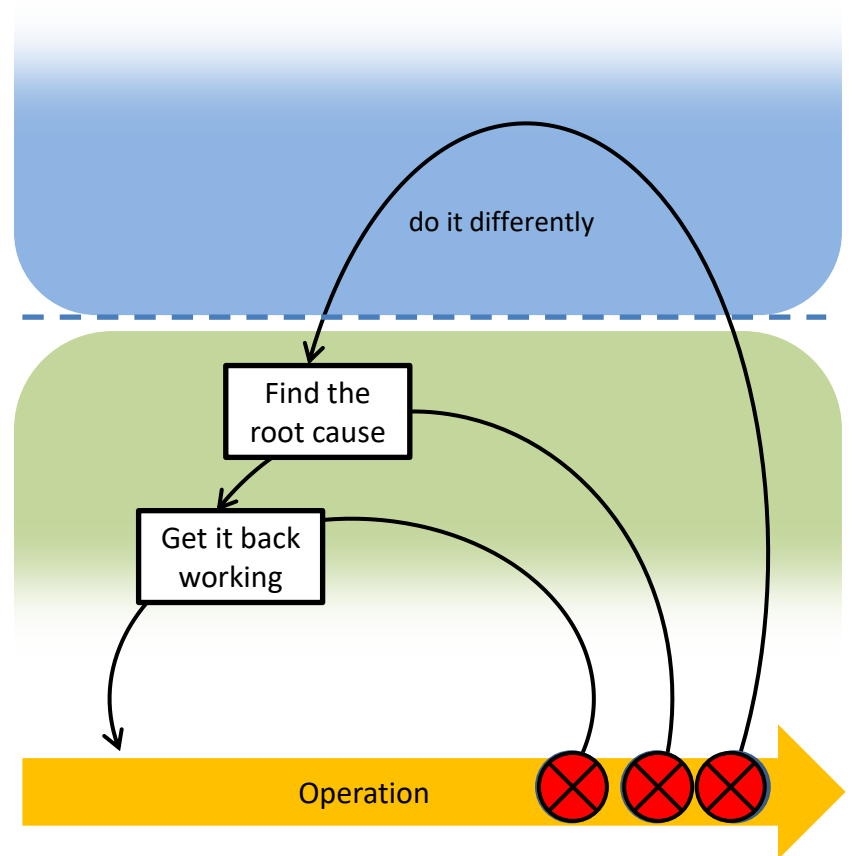
Loops in service support

User
→

Development / Manufacture



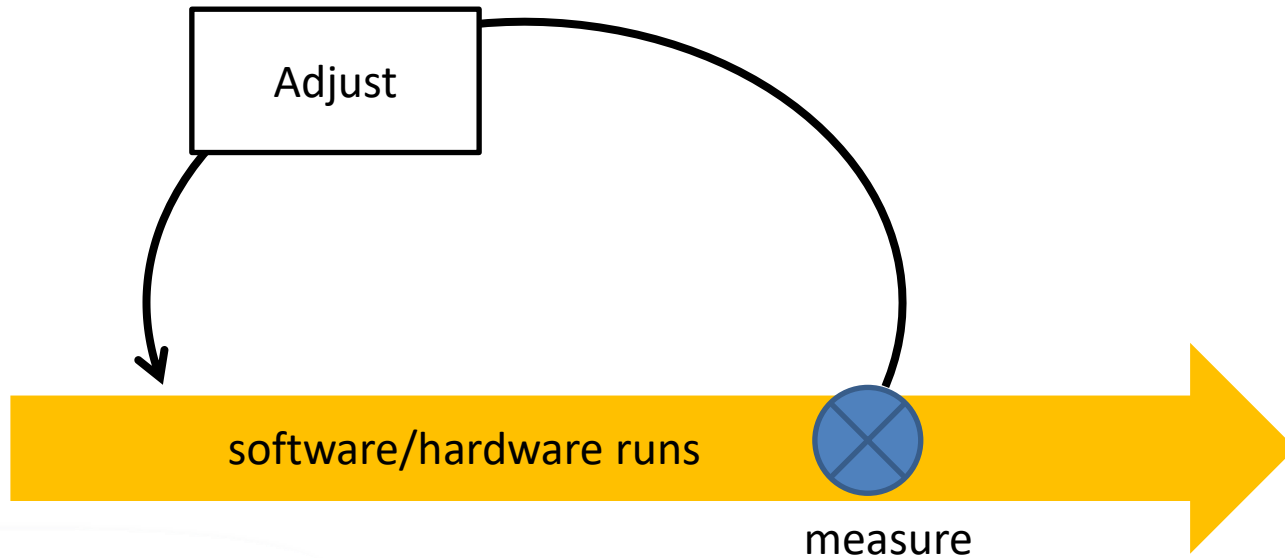
Use/Service



ITaaS

The stability loop in IT

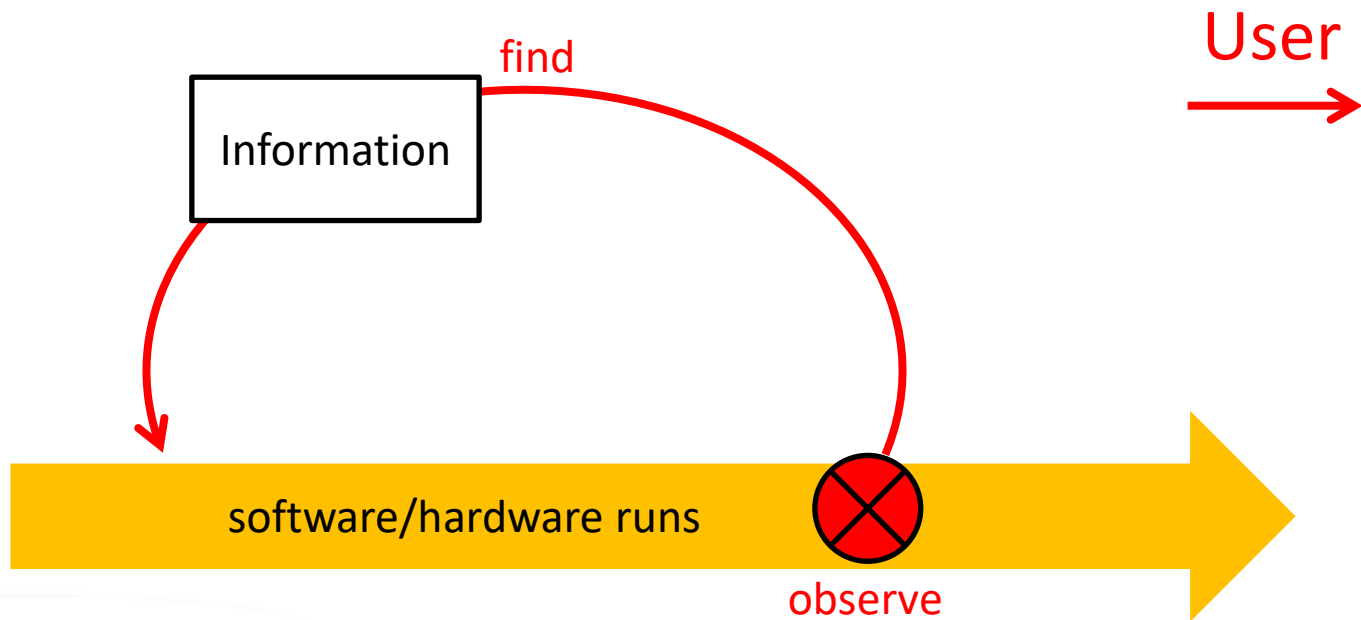
– system detect



Event Management
- *get it back working*

The stability loop in IT

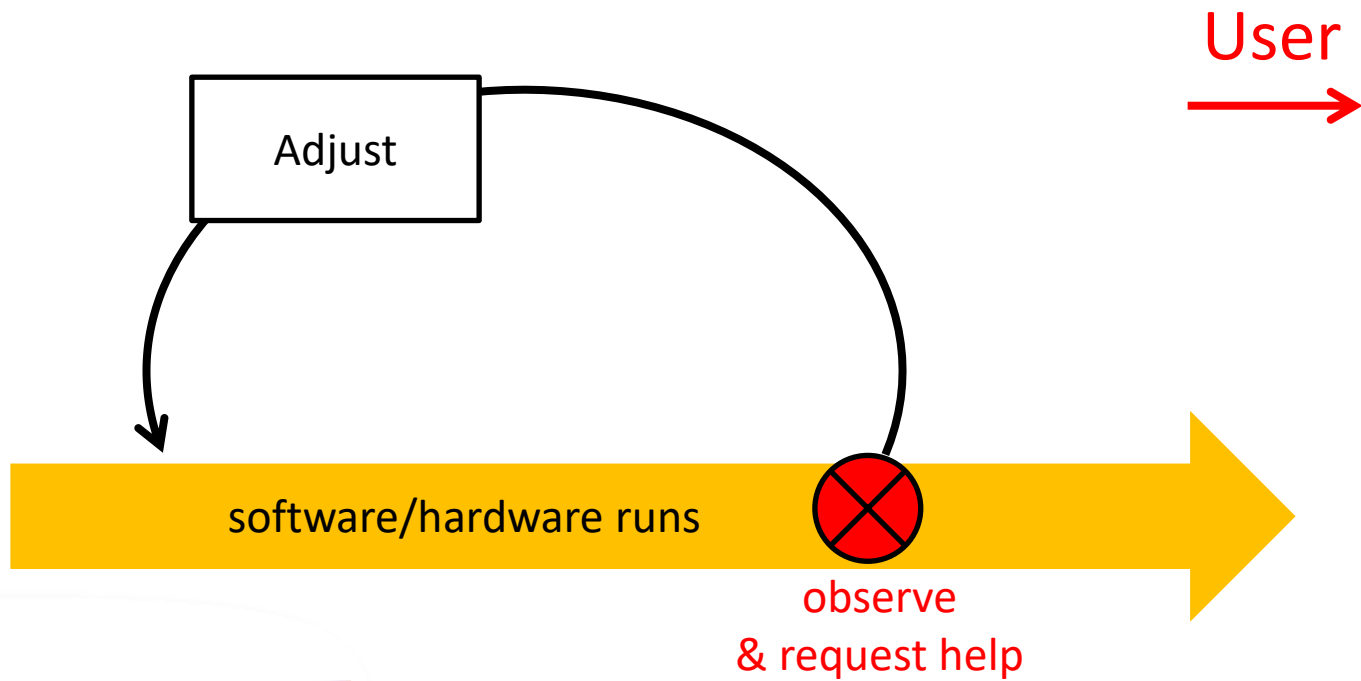
– user fix



- *get it back working*

The stability loop in IT

– user report

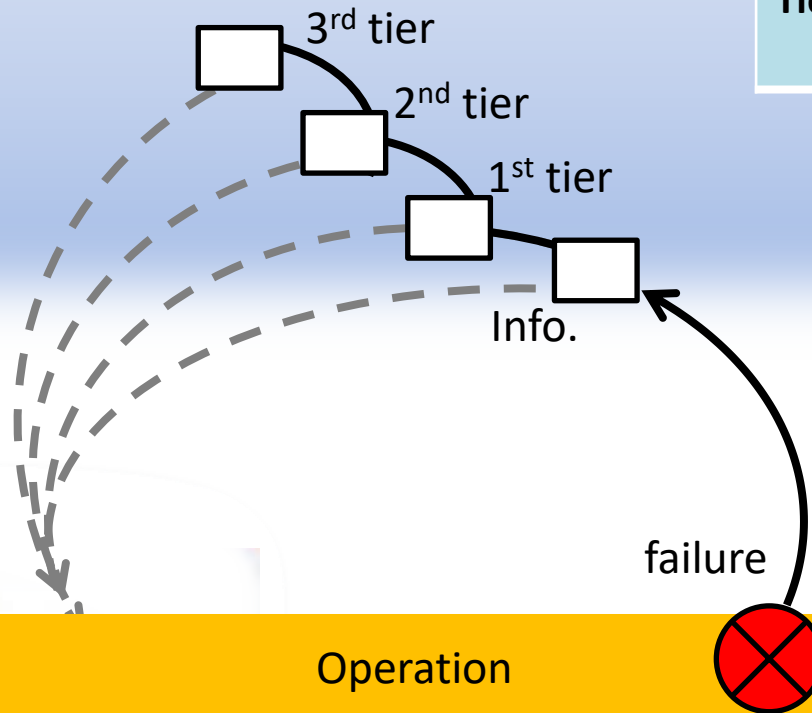


Incident Management
- *get it back working*



Stability loops - tiers

Information	high volume 'zero' effort
Tier 1 - <i>triage</i>	high volume low effort
Tier 2	medium volume medium effort
Tier 3	low volume high effort



Operation

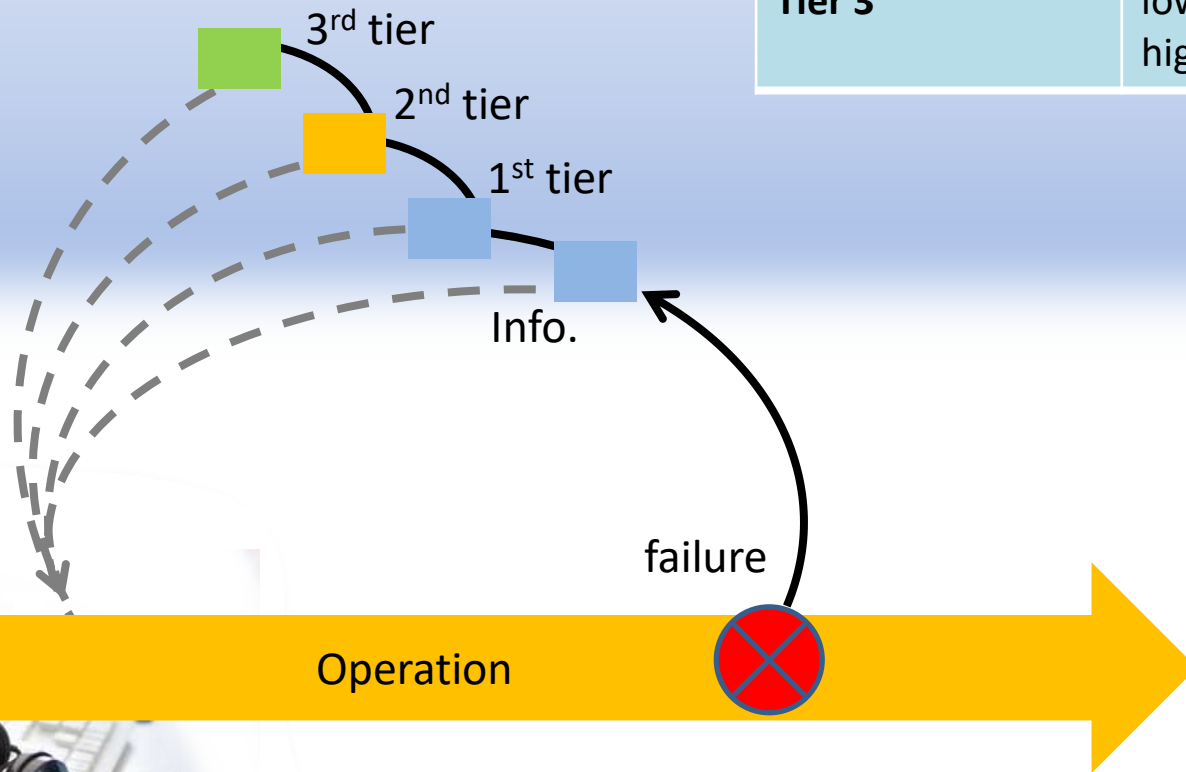
failure

- *get it back working*

Stability loops - tiers

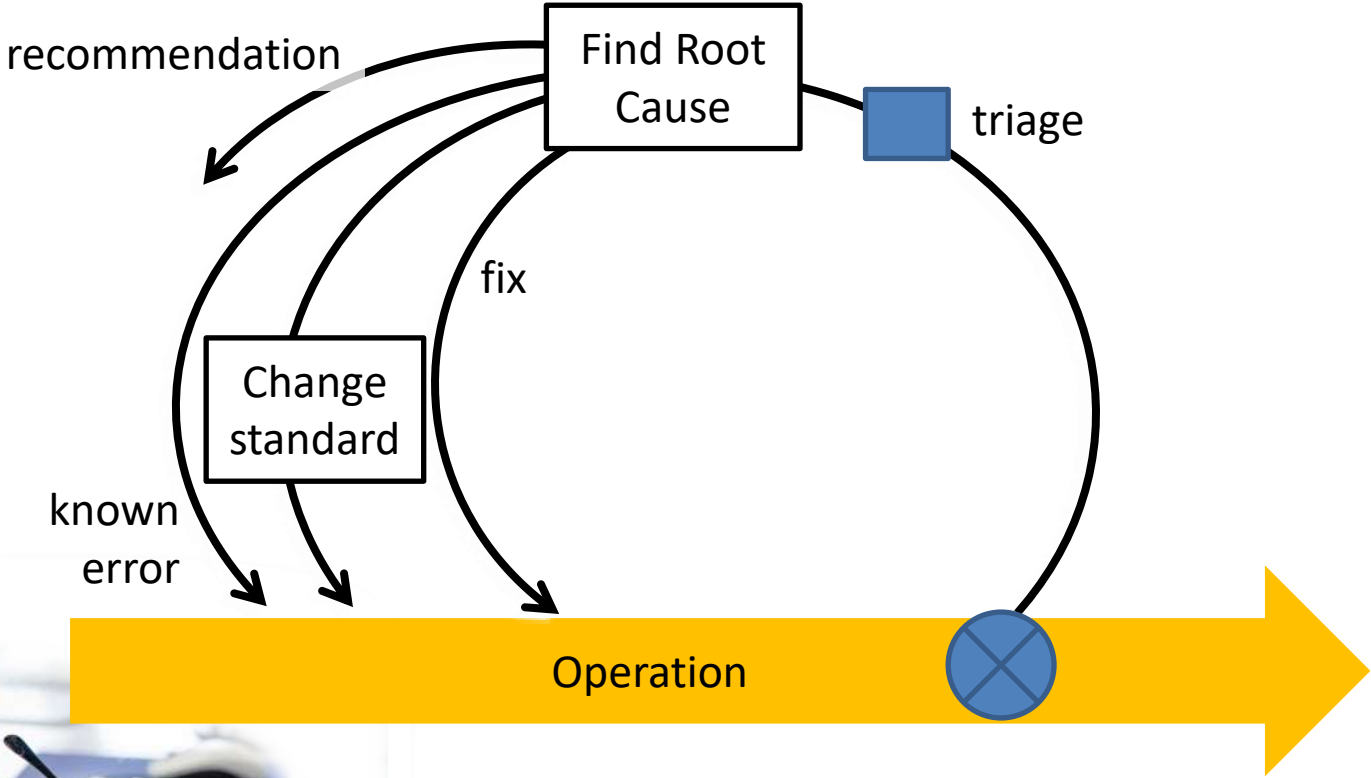
service suppliers

Information	high volume 'zero' effort
Tier 1 - triage	high volume low effort
Tier 2	medium volume medium effort
Tier 3	low volume high effort



- *get it back working*

Adaptability loops – several outputs



- find the root cause



Loops - the set in IT support

troubleshooting

pro-active
maintenance

request
fulfilment

*fault
driven*

*supplier
driven*

*user
driven*

management level

improvement

problems

incidents

renewal

refresh

patch

transformation
requests

non-standard
requests

standard
requests

Operation

Operation

Operation

ITIL processes



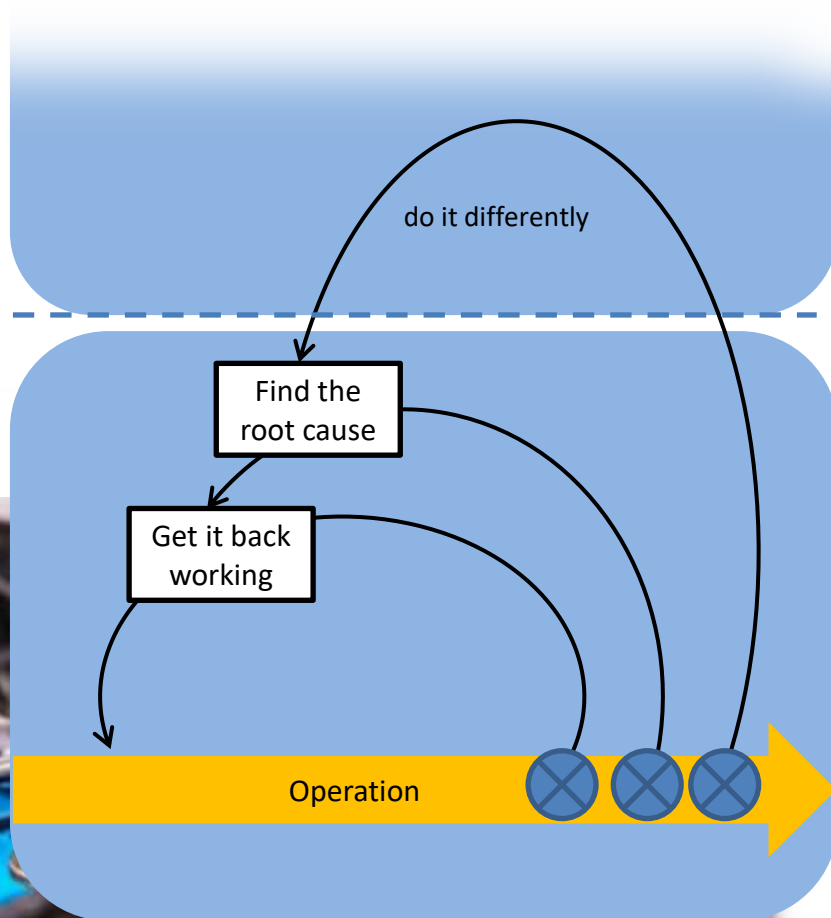
CAR REPAIRS



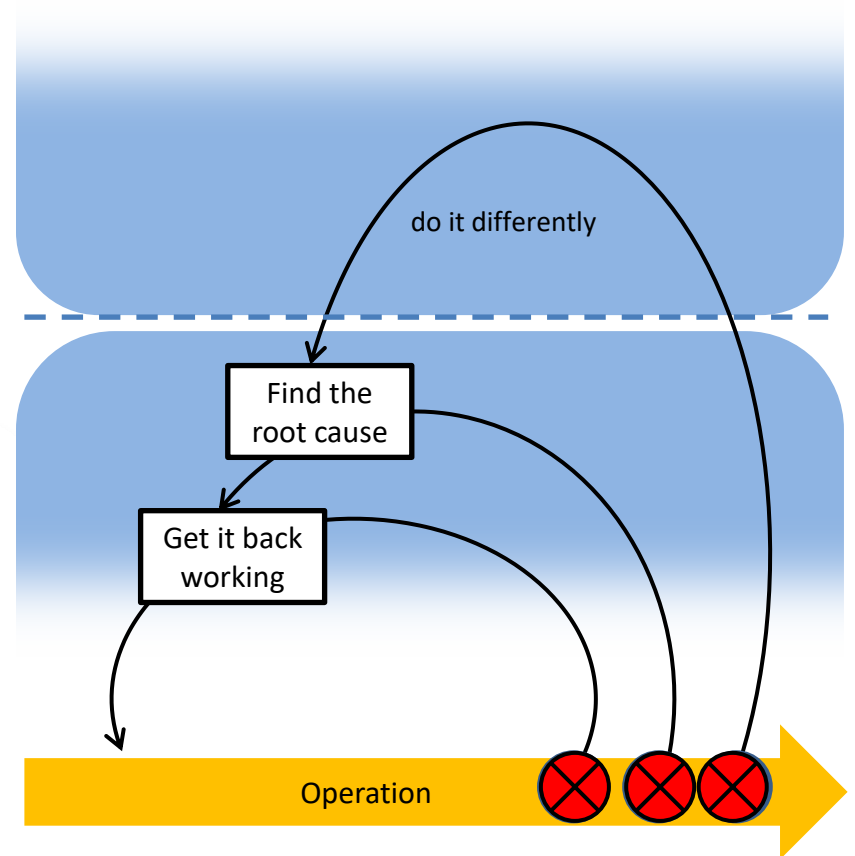
Loops in car repair

User
→

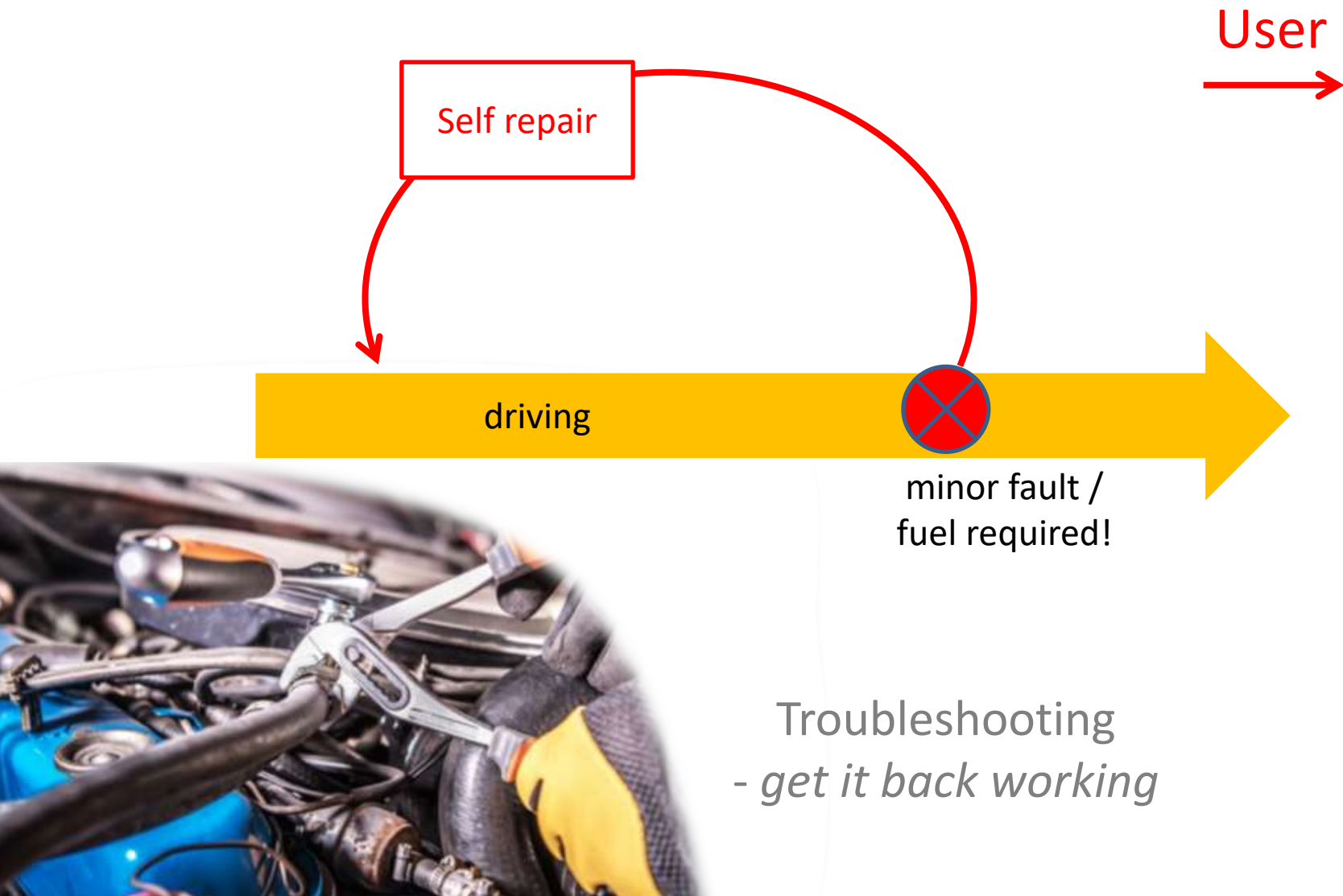
Development / Manufacture



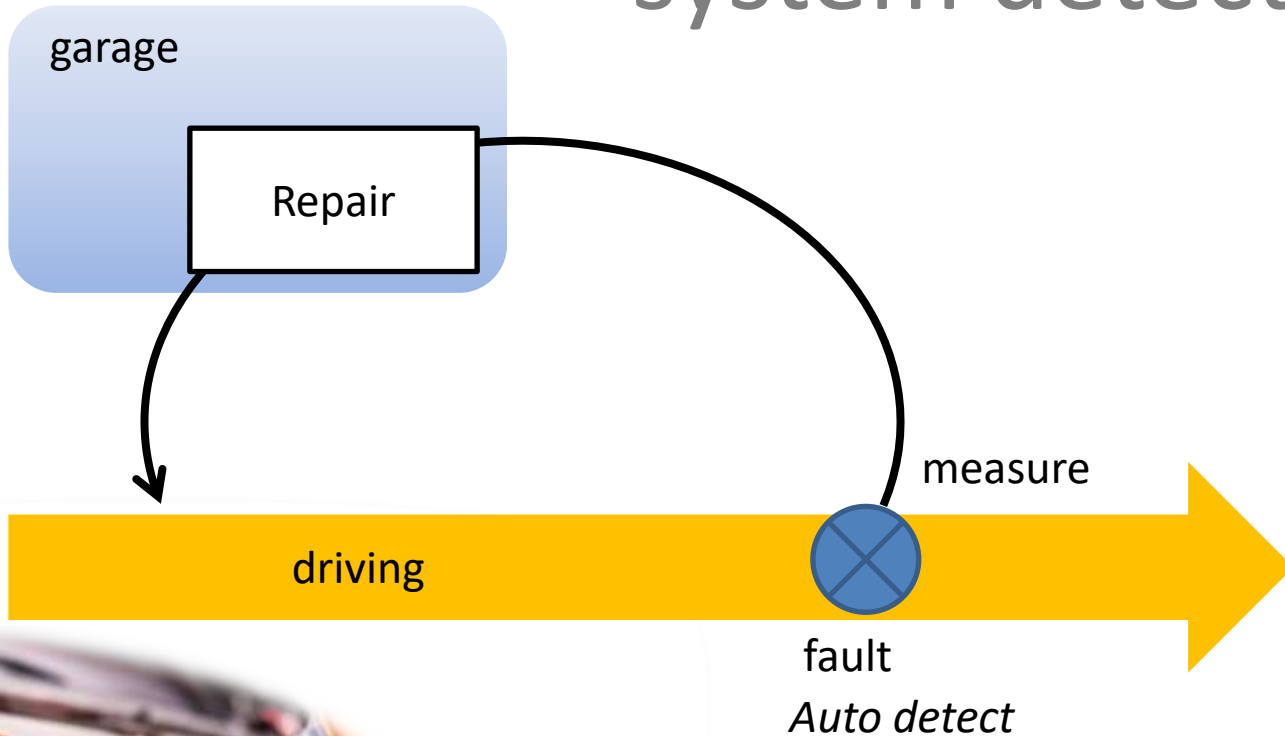
Use/Service



The stability loop – car repair

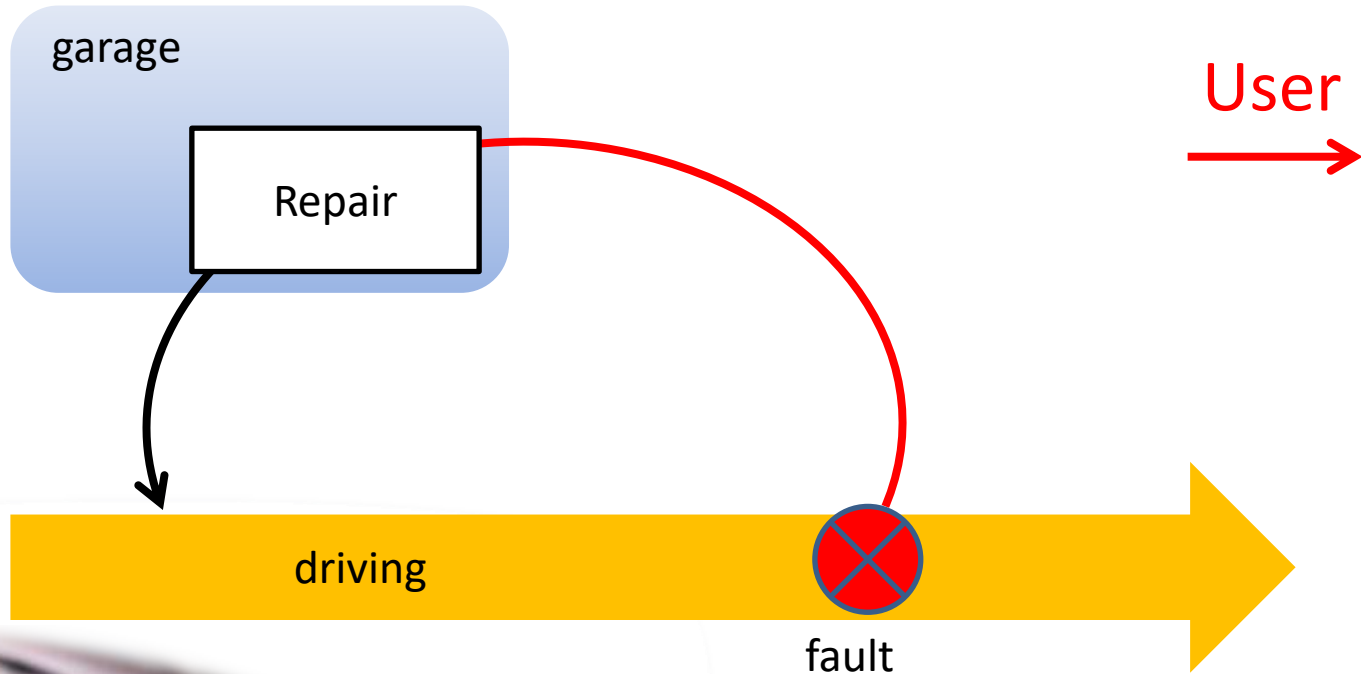


The stability loop in car repair – system detect



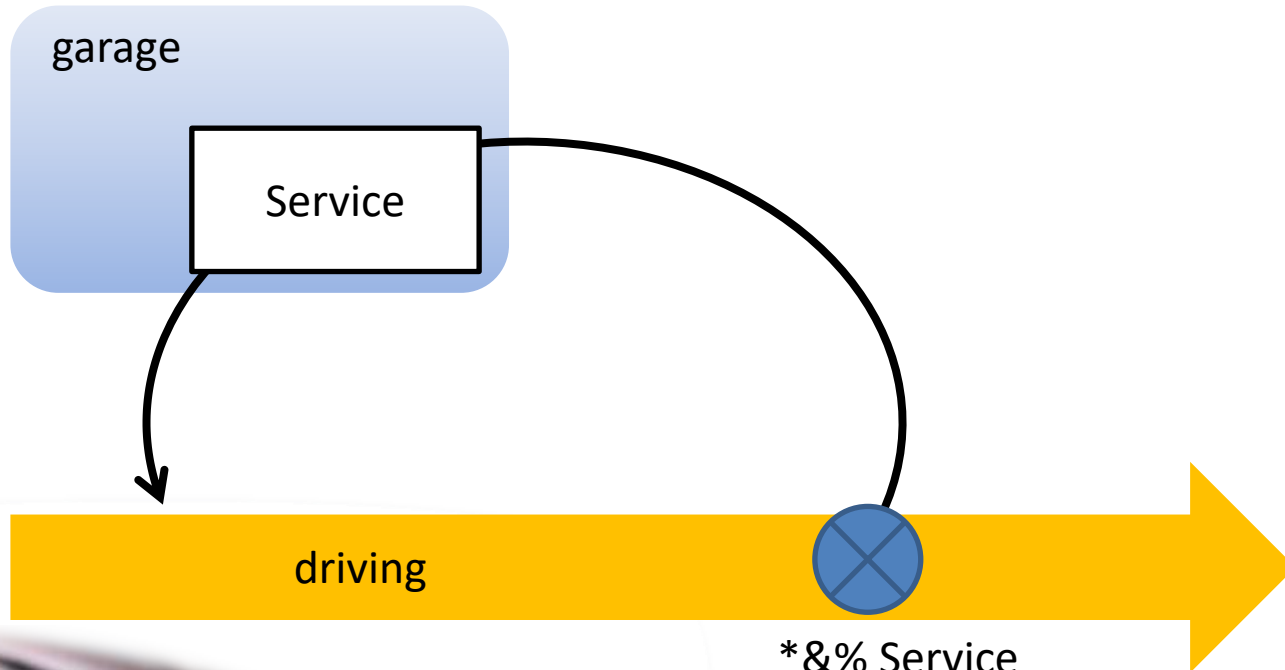
Troubleshooting
- *get it back working*

The stability loop in car repair



Troubleshooting
- *get it back working*

The stability loop – car repair

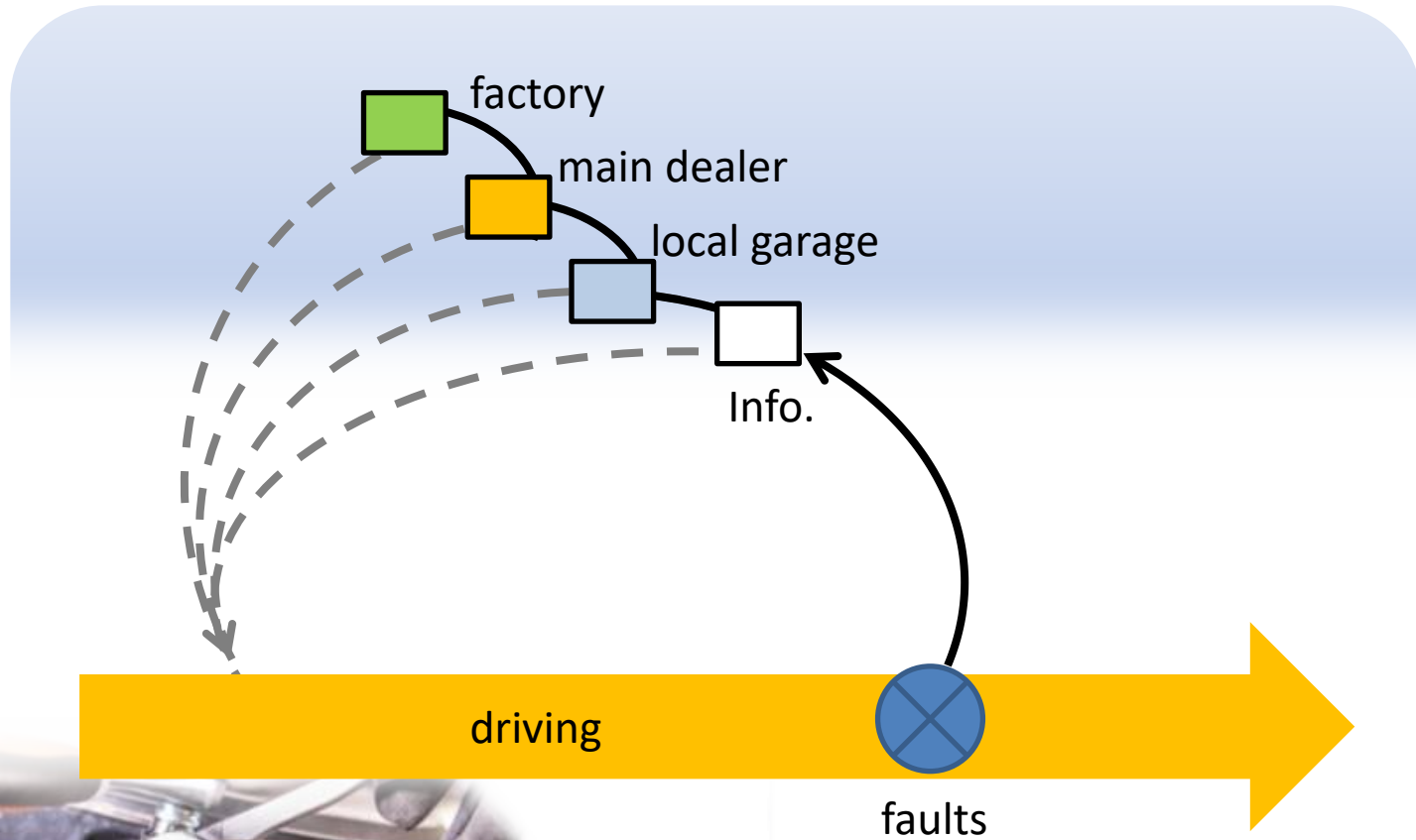


*&% Service
required

pro-active maintenance
- *keep it working*

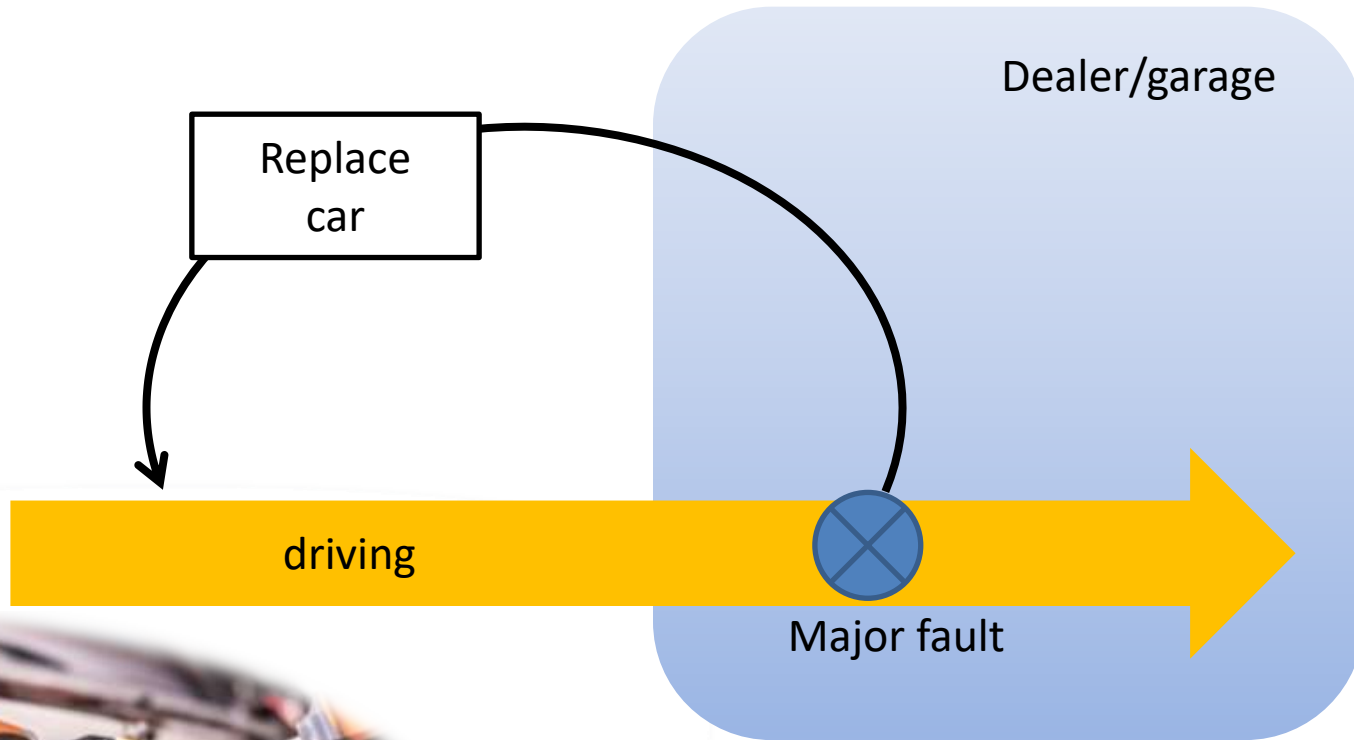


Stability loops – tiers



- *get it back working*

Adaptability loop – car repair



pro-active
- find the root cause

Loops - the set in car repair?

troubleshooting

pro-active

purchases

*fault
driven*

Transformation

replace car

repair

Operation

*manufacturer
driven*

Transformation

recall

service

Operation

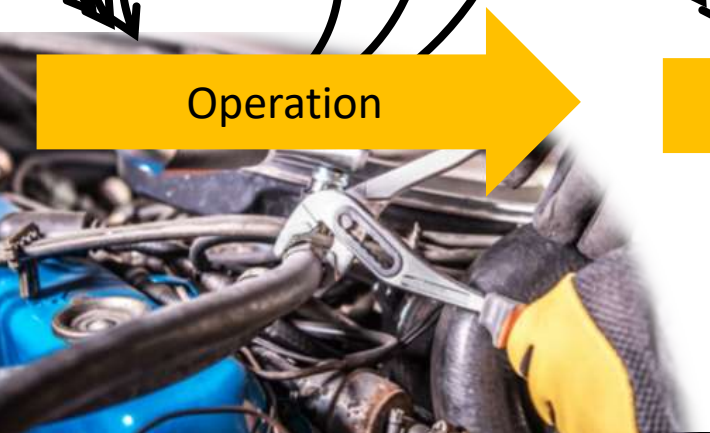
*user
driven*

Transformation

*new
manufacturer*

*new
model*

Operation



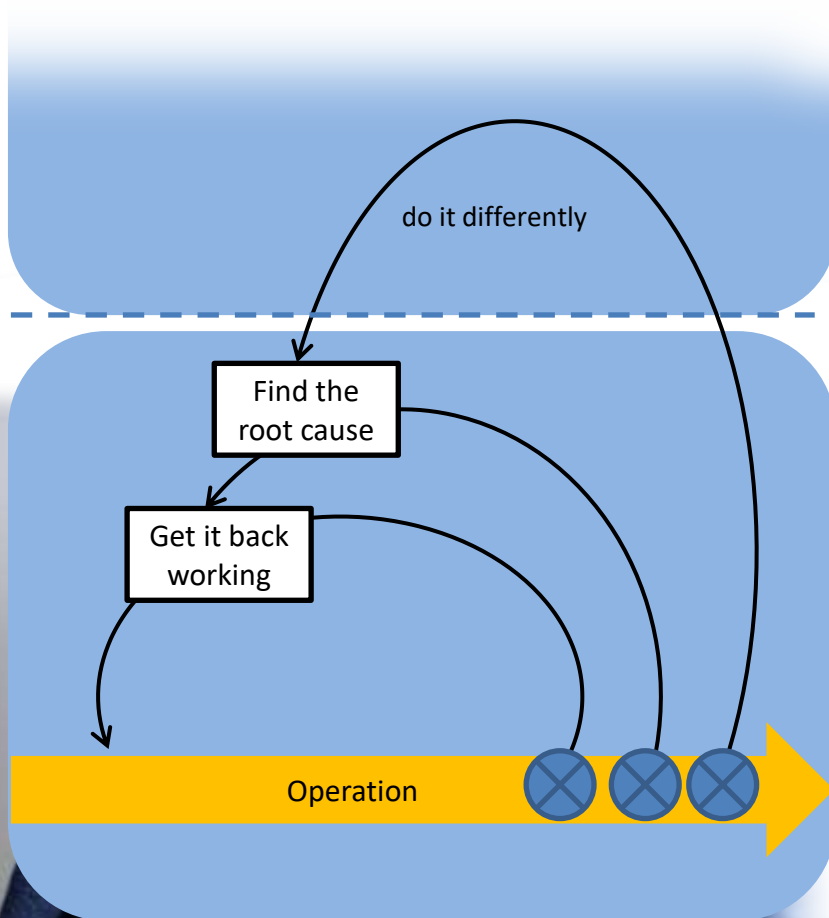
HEALTHCARE



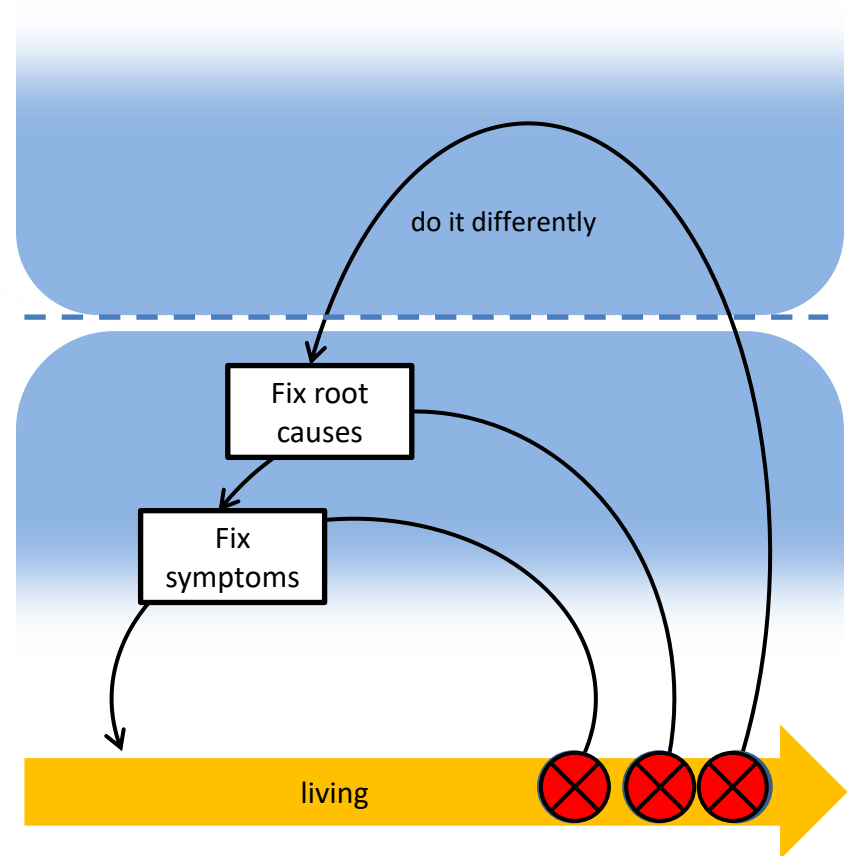
Loops in healthcare

User
→

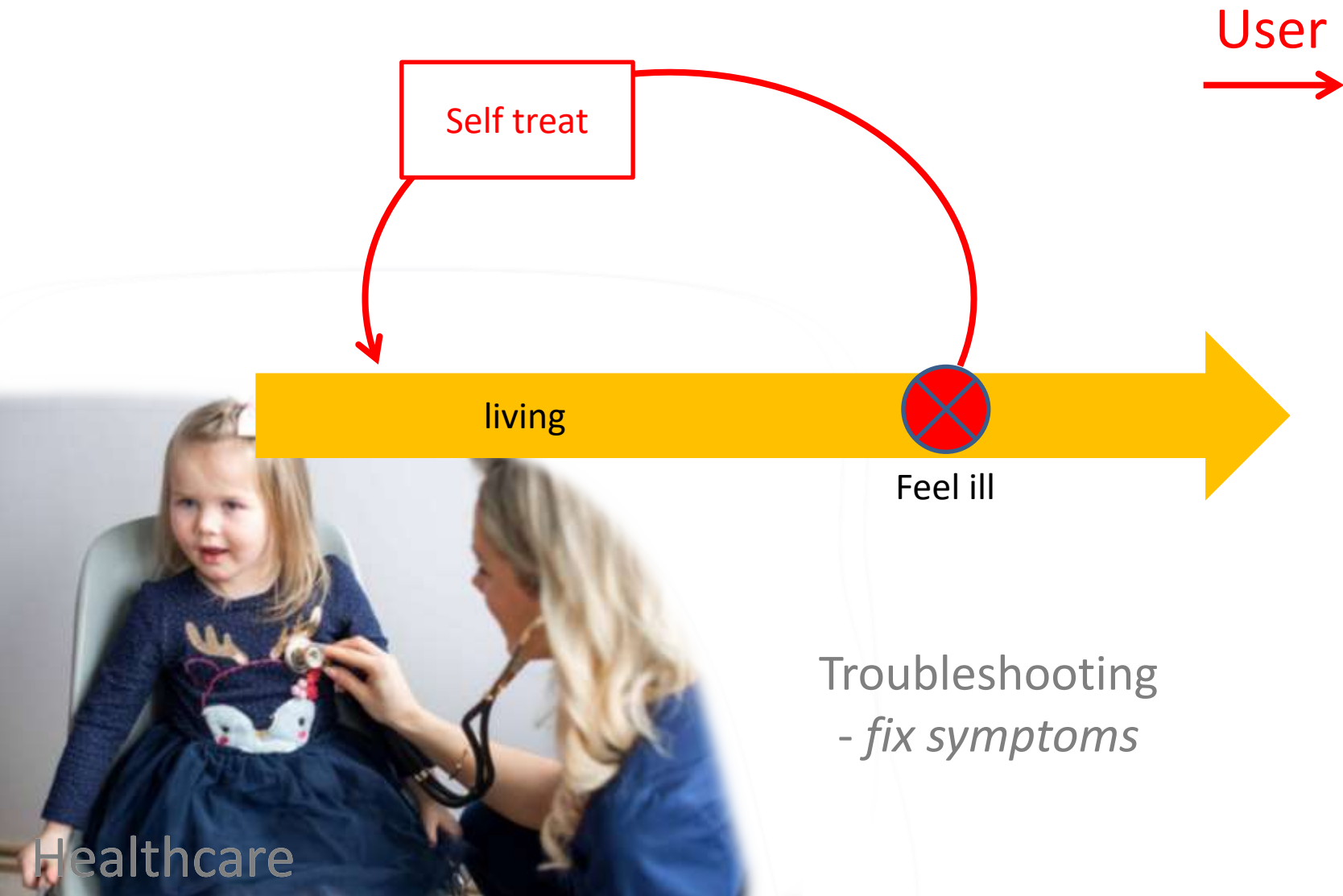
Development / Manufacture



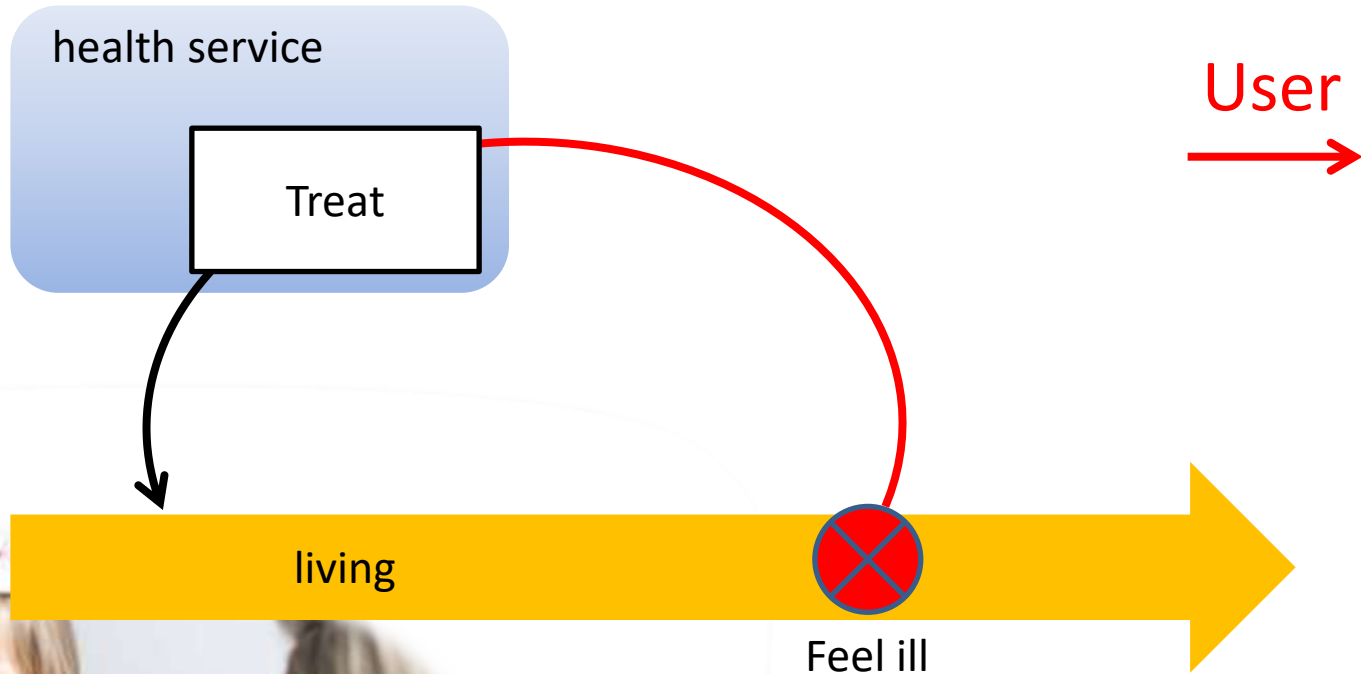
Use/Service



The stability loop – healthcare



The stability loop – health service

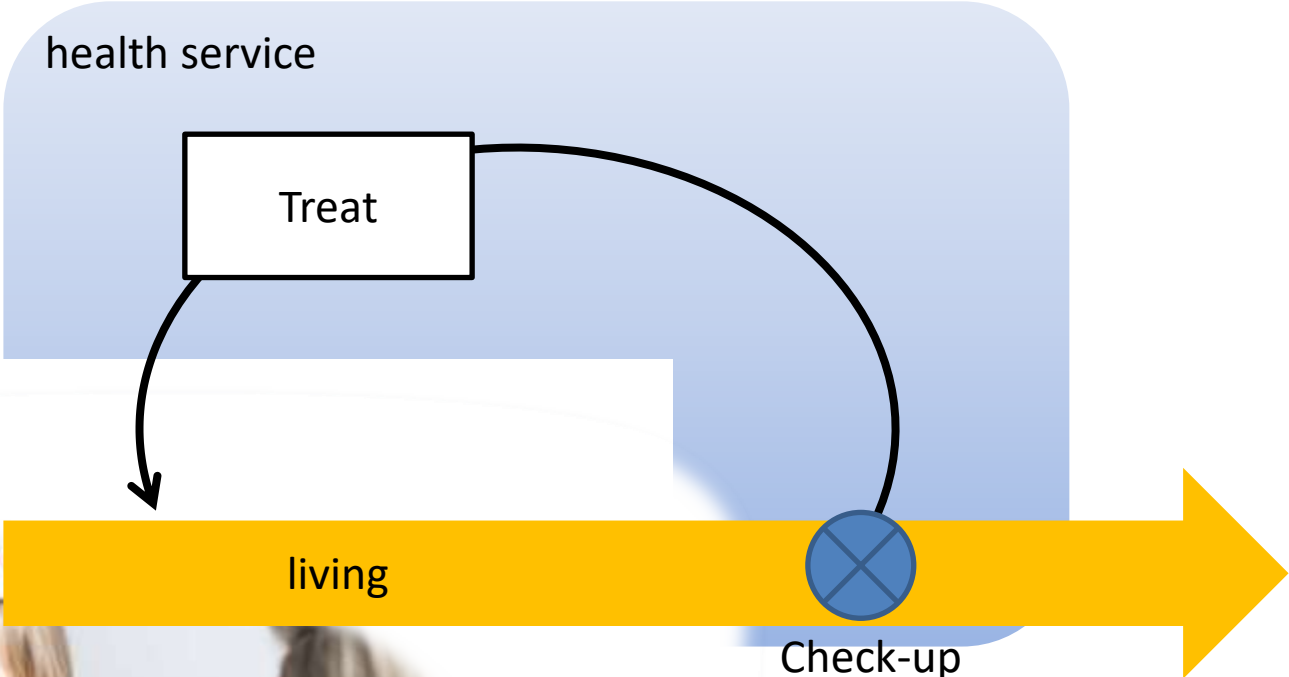


Troubleshooting
- *fix symptoms*

Healthcare

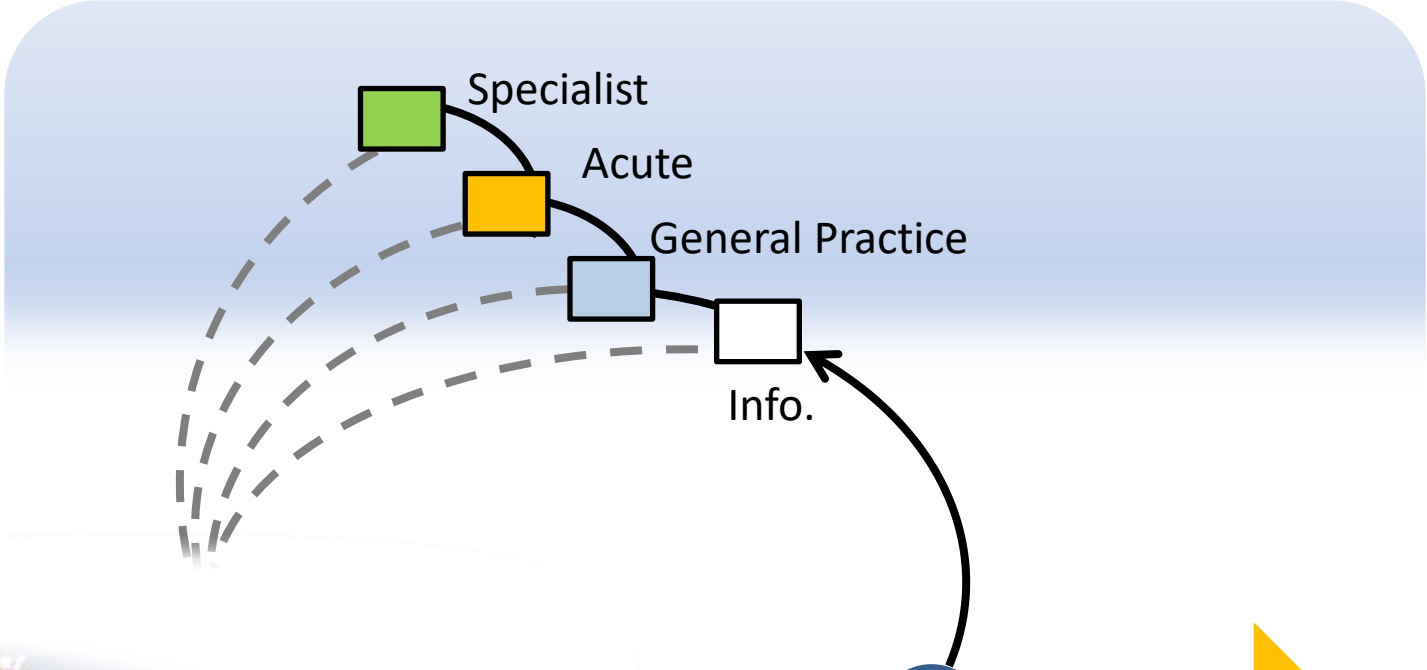


The stability loop – health service

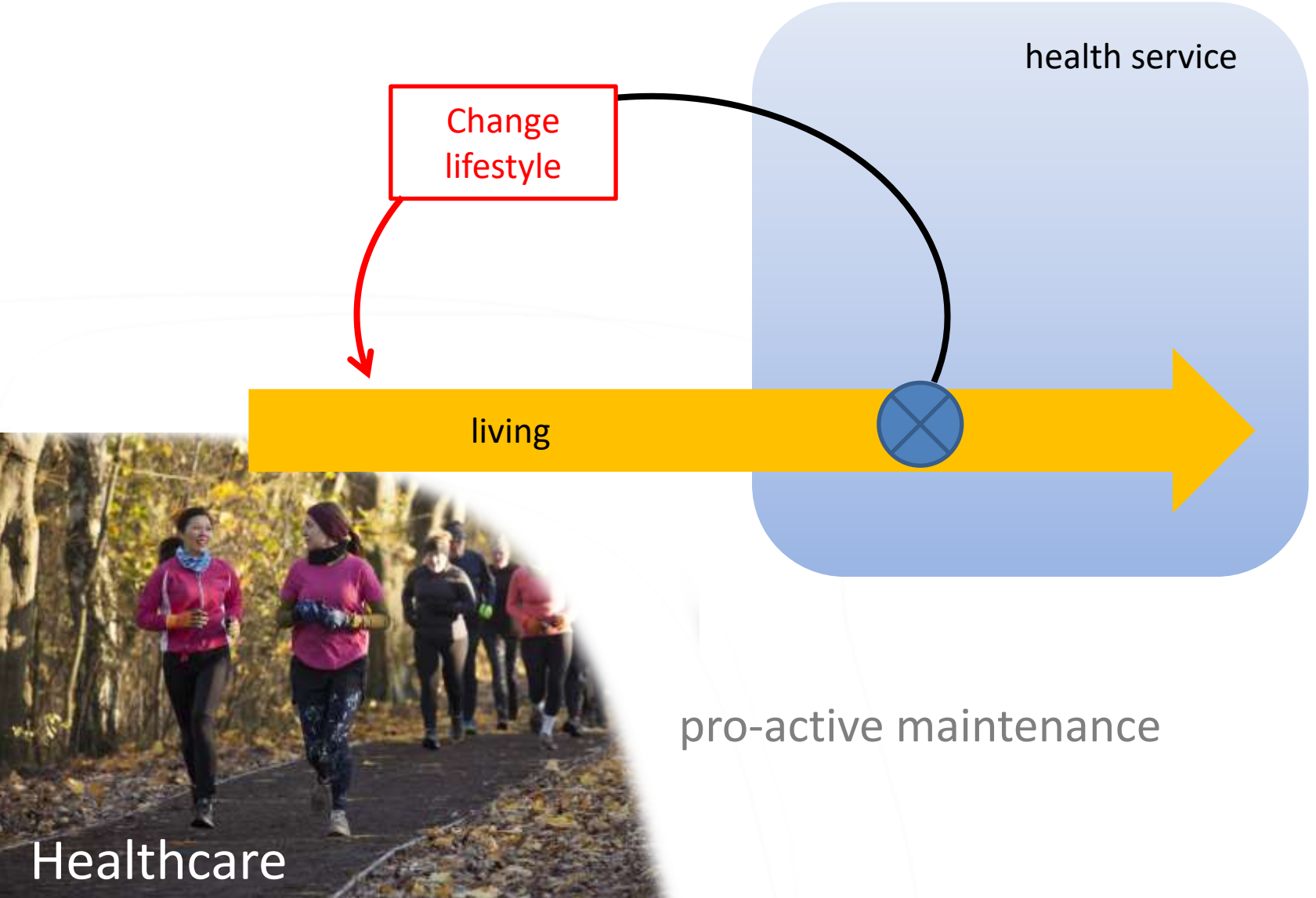


Healthcare

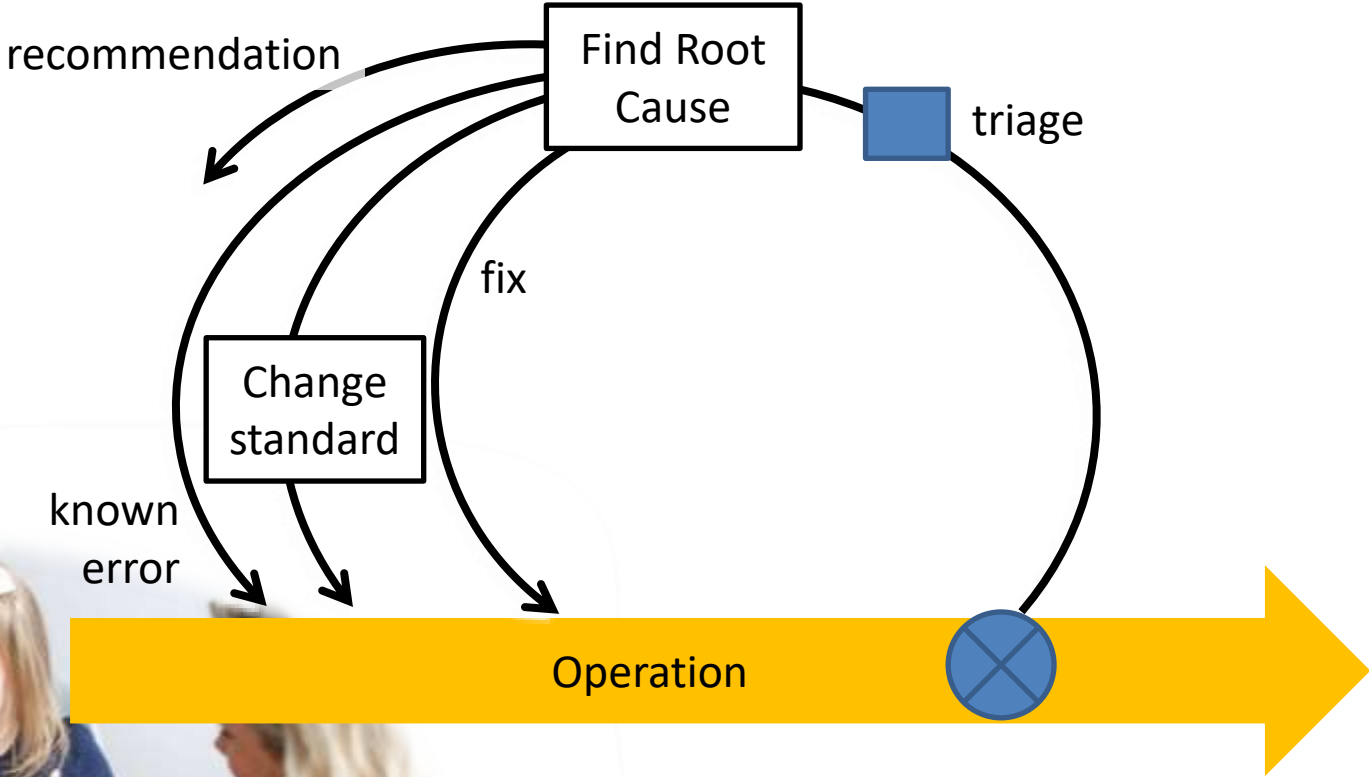
Stability loops – tiers



Adaptability loop – health service



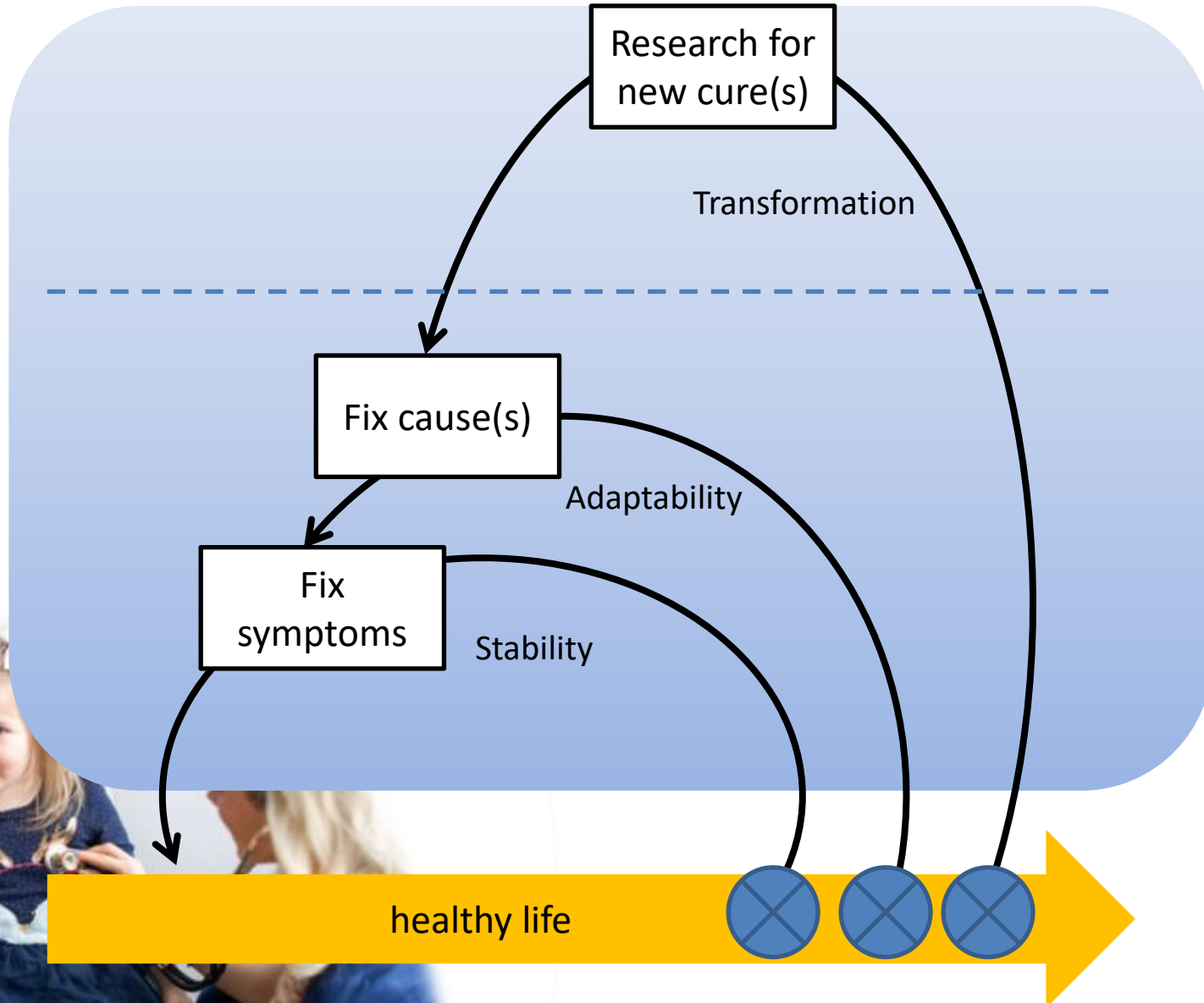
Adaptability loops – several outputs



- find the root cause

Healthcare

Full process



Loops - the set in healthcare?

troubleshooting

pro-active

requests

*illness
driven*

*health-
service
driven*

*user
driven*

new treatments

new treatments

new understanding

check-ups

*follow
through*

*lifestyle
major*

*self-
monitor*

screening

*lifestyle
minor*

Operation

Operation

Operation



Healthcare

Reflections

- Service support (operational) loops take place at least partly outside the service organisation – The ‘Muddy Box’ is muddier
 - ownership of processes changing in both directions
- IT and healthcare designed around maintenance – people want/need transformation
- *but...* recurring patterns found across service support:
 - attempts to ‘regain’ control – reduce muddiness
 - self-correction options in all stability loops
 - tiers of support in stability loops – different “organisations”
 - several options for outputs of adaptability loops



Thank You

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A Systems Thinking Look at IT Service Management

Steve Hales
with

Patrick Hoverstadt & Tony Korycki

Colour & B&W paperbacks & eBook

