Avoiding Goodhart's Law

- Use SLO's as Tools not Cudgels

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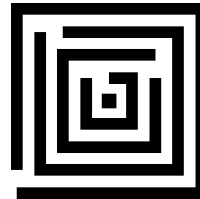# #about_marco

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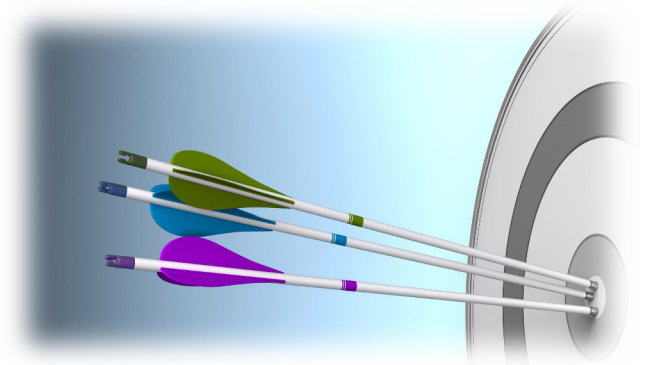
Agenda

➢Gaming the System

➢Three Dimensions

➢Negotiating Successfully

Gaming the System

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Labs Processing

Labs Processing: MQ Flow

HL7

HL7
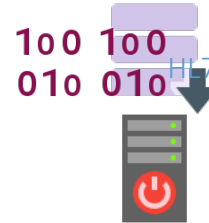
HL7

Labs Processing: Queue Failure
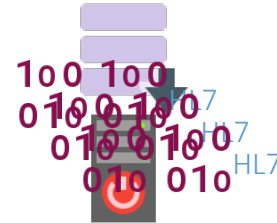
No more than 100
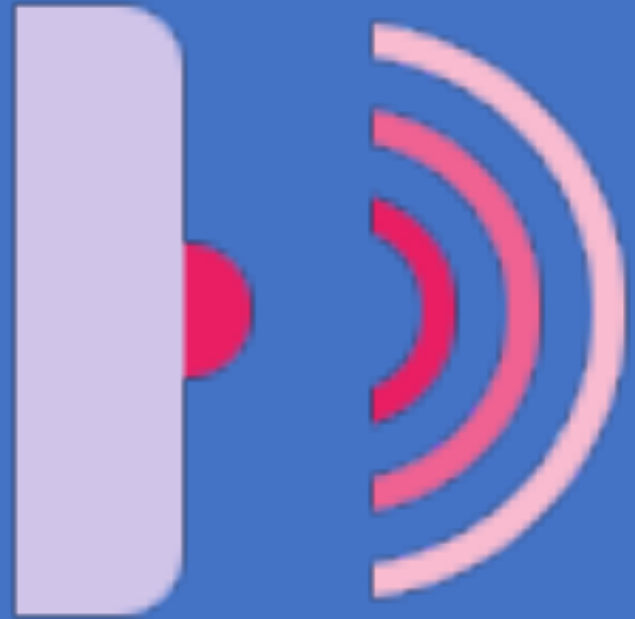
Labs Processing: TX Failure

HL7

"
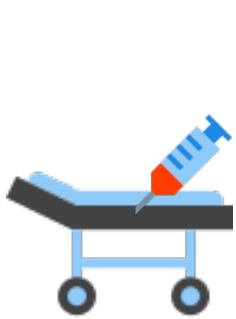
Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.

Charles Goodhart 1975

Problems of Monetary Management

"

When a measure becomes a target, it ceases to be a good measure.

Three Dimensions

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The SLI, SLO, SLA Model

SLI – '*n*' (also composite of nested SLI's)

SLO – '*n <= xxx*' or '*xxx <= n <= yyy*'

SLA - what will happen when budget is used up

- Slowdown is the New Outage - https://bit.ly/slowisnewoutage
  - Include CX-domain availability - (successful requests)/(total requests)

Code

Dimensions

Code

Code Example

- SLI – "well-formed HL7 updates for Labs receive OK responses per APM tool"

    - Specify the transaction

    - Specify the reaction

    - Specify the source

Code Example

- SLI – "well-formed HL7 updates for Labs receive OK responses per APM tool"

  - Specify the transaction

  - Specify the reaction

  - Specify the source

- SLO – "99.9% of well-formed HL7 updates for Labs receive OK responses per APM tool"

Code Example

- SLI – "well-formed HL7 updates for Labs receive OK responses per APM tool"

  - Specify the transaction

  - Specify the reaction

  - Specify the source

- SLO – "99.9% of well-formed HL7 updates for Labs receive OK responses per APM tool"

- SLA – "99.1% of well-formed HL7 updates for Labs receive OK responses per APM tool over previous 28 days else *<action>* will occur"

Infrastructure

- **VIDEO**

Dimensions

Code

Infrastructure

Server Visibility · Database Visibility · docker · kubernetes · Mainframe

Pivotal **CF** · Azure · amazon web services · RED HAT OPENSHIFT

Infrastructure Example

- SLI – "HL7 Lab update transaction total transaction time per APM tool"

Infrastructure Example

- SLI – "HL7 Lab update transaction total transaction time per APM tool"

- SLO – using a performance curve
  - "90% of Lab updates will complete in less than 30s"
  - "99% of Lab updates will complete in less than 1m"
  - "99.9% of Lab updates will complete in less than 5m"

Infrastructure Example

- SLI – "HL7 Lab update transaction total transaction time per APM tool"

- SLO – using a performance curve
  - "90% of Lab updates will complete in less than 30s"
  - "99% of Lab updates will complete in less than 1m"
  - "99.9% of Lab updates will complete in less than 5m"

- SLA – "99.5% of Lab updates will be added to patient records within 5 mins over previous 24 hours else *<action>* will occur"

Business & Customer Experience (CX)

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CON_
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Dimensions

Business   Browser Real-User   Mobile Real-User   Synthetic   Internet of Things (IoT)

Code   Java   Microsoft .NET   PHP   C++   C   GO   Ruby   Swift   node JS   python

Infrastructure   Server Visibility   Database Visibility   docker   kubernetes   Mainframe

Pivotal CF   Azure   amazon web services   RED HAT OPENSHIFT

Business & CX Example

- SLI – "Patient lookups repeated beyond 10s and within 5m per Patient Record Application"

Business & CX Example

- SLI – "Patient lookups repeated beyond 10s and within 5m per Patient Record Application"

- SLO – "Less than 0.5% of Patient lookups repeated beyond 10s and within 5m per Patient Record Application"

Business & CX Example

- SLI – "Patient lookups repeated beyond 10s and within 5m per Patient Record Application"

- SLO – "Less than 0.5% of Patient lookups repeated beyond 10s and within 5m per Patient Record Application"

- SLA – "Less than 1% Patient lookups repeated beyond 10s and within 5m per Patient Record Application over previous 8 hours else *<action>* will occur"

Negotiating

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Prepare to Engage

- Know thyself
  - How much risk can you realistically absorb in a given period?
  - Is this evenly spread?
  - Will this be different in 12 months? 24 months?

- Estimate your boundaries

- Draft your strategy model

- Identify your facilitator

- Schedule your negotiation

Negotiation Flow

• Warmup:

• Test Drive

• Assess

• Propose

• - - RECUR - -

• Agree

Avoiding Goodhart's Law

- Learn from my experience:
  - Manage to outcomes, not metrics
  - Reward vs Punishment
- Assess your SLI/SLO/SLA's against the three dimensions:
  - Code; Infrastructure; Business & Customer Experience
- Predictable variance wins
- Add negotiation to your skillset

Links & More

- https://en.wikipedia.org/wiki/Goodhart%27s_law - Goodhart's Law

- https://bit.ly/slowisnewoutage - Slowdown in the New Outage

- https://landing.google.com/sre/sre-book/chapters/monitoring-distributed-systems/ - Golden Signals

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- https://twitter.com/marcocoulter My twitter

Thank you

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- **VIDEO**

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