STPA & Assumption-based Indicators Applied to Teams

A journey through the process

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• I work as Strategic advisor, and have worked in the Netherlands, Austria, China, Cambodia, United States, and Vietnam.

• Areas of interest: Strategy, strategic capability, putting people/organizations in control of their goals, Red teaming, and Strategic foresight.

• First came into contact with STAMP in 2012.
Context

• Team as a Service, dedicated teams, and dedicated assets.

• Execution premium process, Red teaming, Scenario planning, ...

• Create a reusable format to assemble and field teams that are in control, and have the ability to maintain mission capability as part of strategic alignment with customers.
**Mission capability**

**Mission**
The mission provides the function and purpose of an entity.
- The mission determines which activities and capabilities have to be developed.

**Goal (vision on organizational level)**
A specific (set) deliverable(s) that has to be achieved within a specific period of time or has to be maintained over a specific period of time.
- The goal determines at which capacity the activities and supporting capabilities should operate.

**Mission capability**; The ability and readiness to execute on the stated mission at required capacity level; losing MC is defined as a loss event that has to be prevented.
1. Unsafe controller behavior

2. Cause of inadequate feedback/information

3. Control path

4. Other factors related to the controlled process

- **Controller**: team management
- **Actuator**: positions focused on execution
- **Controlled process**: aligned processes
- **Sensor**: Indicators (leading and lagging) that are connected to execution, management and other stakeholders
Steps taken

1. Strategy blueprint including mission
2. Defining assumptions and signposts
3. Running defined loss events through STPA framework
4. Securing mission capability into team organization (hedging & shaping)
Assumptions & mitigation

Source of image:
Assumption-Based Planning,
A Tool for Reducing Avoidable Surprises,
James A. Dewar RAND

Source of image:
A System-Theoretic Approach to Risk Analysis
By Dro J. Gregorian Sam M. Yoo,
Leveson’s “strength of potential controls”.

Table 4-2: Mitigation Effectiveness Levels
Standard loop

Control
• Goal condition, Model condition, Influence, Observability

Mission capability
• Mission capability designed into the loop
• Assumption-based leading indicators
• Improved processes and capabilities, configurable set of control measures
After action assessment

• **Detail;** STPA opens up a whole new level of detail that some love and some found it overwhelming.
  • Created categories and summaries to discuss high level issues, drill down to detail when needed.

• **Language/models;** at the introduction presentation we got feedback that language was too formal/theoretical and not everybody could catch the meaning.
  • To combat this we had language simplified without losing the meaning (simpler wording and more descriptive).

• **Competency level; 1) Junior:** able to work with artifacts based on instruction, **2) Medior:** able to independently work with artifacts and solve problems (back to base-line operation, **Senior:** able to independently go through an exercise and create and improve artifacts.)
After action assessment

• **Dedicated manager;** maintaining and improving is now embedded in dedicated manager, and competencies needed to use the system effectively have been secured in organizational competency catalog.

• **Loss scenarios;** go to pace for reference and source for lots of improvement ideas by all levels – these are used on all levels to create understanding.

• **Friction;** acceptance of the system showed friction on project management level (the more senior the harder the acceptance).

• **Adjustment;** about 6 months into the project some of the assumptions about the context/environment changed, which led to an update and refinement.
What has not been seen, is unlikely to be seen in time; create memories of the future to create insight and foresight.

Inspired by Arie de Geus,
Royal Dutch Shell (Scenarios/Planning)
Further conversation...

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