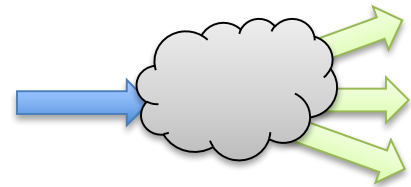# Heuristic and Algorithm Field Guide

How do I recognize a heuristic?

A heuristic is a rule of thumb, a vague but effective way of predicting or improving outcomes.

A heuristic offers no guarantee or minimum level of performance.

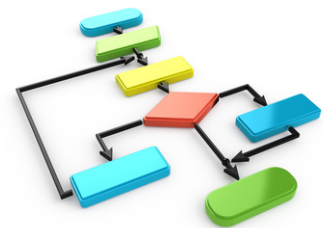*Here are some ways to help recognize a heuristic at work in a business process:*

- **Outcomes are inconsistent.** The process gives different results at different times. The reasons for the inconsistent results aren't obvious, or are strongly related to who is doing the work.
- **Experts are needed.** Employees who have 'good judgment' or 'a special skill' or 'a lot of experience' are required for good outcomes.
- **"I just know."** Employees perform work well, yet have difficulty explaining how they work or training others how to perform the same work.
- **High personnel risk.** If a key employee isn't performing the work, then work outcomes are noticeably worse.

Here are some heuristics or words people might use in place of "heuristic."

Common sense, intuitive judgment, rule of thumb, stereotyping, snap judgment or profiling.

How do I recognize an algorithm?

An algorithm is a step-by-step process that delivers a sufficiently repeatable result, given sufficiently similar inputs.

An algorithm offers some kind of guarantee or minimum level of performance.

Here are some ways to help recognize an algorithm at work in a business process:

- **Outcomes are consistent and sufficient.** The process delivers good, repeatable results. When things don't go well, cause-and-effect relationships can be established.
- **Employee interchangeability.** Employees unfamiliar with the work can learn and perform the work adequately in a reasonable amount to time. They may not be as speedy as experts, but they produce good outcomes without creating a lot of scrap first.
- **"A monkey can do it."** Steps for completing the work are well understood. It is clear how decisions are made during the progression of the work.

A Caution: Mixing

A business process *could* be built only of algorithms. Payroll is almost all algorithmic.

A business process *could* be built only of heuristics. The way people buy antiques at auction is typically heuristic.

Much more often, business processes are built using both heuristics and algorithms.

Is our heuristic a good candidate for conversion to an algorithm?

Q: Is the conversion project already on a list of division projects for this fiscal year?

If it is, that's great. The next challenge is to talk about the change in design thinking language: use "heuristic" and "algorithm" in discussing the project.

Q: Does conversion from heuristic to algorithm require development of computer code or a computer system implementation?

If it does, and the computer-related work is *not* already part of an existing project for this year, we recommended looking for another heuristic to convert.

Q: Does conversion from heuristic to algorithm require new, as-yet-unplanned collaboration across divisions?

If it does, we recommended looking for another heuristic to convert. We want to avoid re-creating and re-prioritizing the project mix for this fiscal year.

Q: Is the heuristic performed by someone nearing retirement?

If it is, that's a plus. Converting that heuristic to algorithm will help your organization continue to perform well after the employee retires.

Q: Is the heuristic performed by people willing to share their expertise?

If it is, that's a plus. The conversion process will go faster and have better outcomes with willing participants.

References

Design of Business, Roger L. Martin, pp. 10-14
Wikipedia, Heuristic: https://en.wikipedia.org/wiki/Heuristic
Wikipedia, Algorithm: https://en.wikipedia.org/wiki/Algorithm
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