Algorithms - Leveraging Data for Exponential Growth

Algorithms are a set of instructions that are designed to do a specific task. For example, making a cup of tea. The process is documentable, repeatable, shareable, and potentially, scalable.
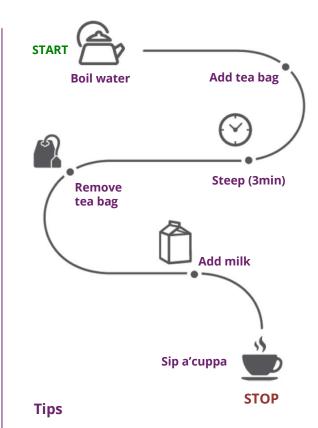
Yet as simple as that might sound, algorithms are the building blocks for process improvement, software and automation, "Artificial intelligence" (machine learning and deep learning) and much more.

Algorithms help companies make sense of *massive* amounts of data. In a world with billions of sensors and Internet of Things (IoT) devices, and mind-boggling amounts of data generated every day, algorithms are critical to business success for any exponential organization.

These capabilities are now accessible to startups and mid-market organizations!

A few examples of algorithms at work:

- **Personalized health:** Targeted cancer treatments using DNA sequencing. Early detection of heart conditions using 'wearables' (Apple Watch)

- **Search:** "Alexa, find me an electric tea kettle under $50." (and of course, Google!)

- **Matching functions:** Matching a rider and driver (Uber), a guest to a host (AirBnb), or a shopper to the perfect blouse (Stitch-Fix)

- **Prediction:** Stock performance, autonomous vehicles, Facebook news feeds, consumer behavior

- **Optimization:** Vehicle routing (UPS saves their drivers 85 million miles per year with this gem!)

START — Boil water → Add tea bag → Steep (3min) → Remove tea bag → Add milk → Sip a'cuppa — STOP

Where to begin in your organization

- Identify the problem or need you are trying to resolve

- Identify the 'customer' with the problem (internal or external to the organization)

- Identify the data you have

- Identify the data you need

- Set up and run experiments to learn about the problem, data and potential solutions

- Recruit the right resources to support your decisions and actions.

Tips

- Struggling to accurately predict and decide? e.g. Inventory levels, job costing, which styles to order. If you could rapidly predict with near-100% accuracy, what would that do for you?

- Where could you automate a costly, repetitive task?

- Where might an algorithm (or AI) be used to enhance performance of a person?

- Do a cost-benefit analysis for implementing any algorithm. Will the results be worth the cost of developing the algorithm and "feeding" it with data?

- Read about Experimentation and download our Experimentation Tool here - https://blog.growthinstitute.com/exo/experimentation

- Consider staff-on-demand - resources that you don't 'own' - to quickly access expertise for your experiments.

Algorithms - Where to begin

1. Problem

What problem or challenge do you wish to solve? Who is the 'customer' for the solution?

If you didn't have that problem, what would it mean to your organization? (what's the value of *not* having the problem?)

How long have you been working on this problem? What have you tried?

2. Data

Do you have the data you need? If not, what data do you need? Where can it be found or captured? (Some data can be purchased, other data is publicly available.)

Who does this data and subsequent decisions affect? (Consider regulators e.g. GDPR in EU)

3. Solution

What experiments could you run to to learn about the problem, data and potential solutions?

*Use our **ExO Experimentation Tool** to design and run your experiments!* blog.growthinstitute.com/exo/experimentation

See **Chapter 4 - Inside the Exponential Organization** in *Exponential Organizations* by Salim Ismail, Michael S. Malone & Yuri van Geest. The Exponential Organizations Master Business Course is a part of the Growth Institute MBD Program. To learn more, visit www.growthinstitute.com/exo
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