Appendix: Glossary of Terms Not Defined

Aggregate Analysis: Imagine you run a wedding business. An aggregate analysis tells you that most of your customers live in Oregon and are women in their early 30s. These insights let you narrow in on advertising vehicles that reach that audience most efficiently.

Correlation: Correlations demonstrate the link between two variables. For example, in your business, which of the advertising vehicles you use produce the most leads? A correlation analysis using Excel can reveal the links between lead generation and advertising vehicles very quickly, allowing you to eliminate some and invest more heavily in others.

Trends Analysis: The continued tracking of correlations over time.

Sizing and Estimation: Educated guesses about the potential of a market, for example, using knowledge, experience, and the data at hand—a common and sometimes valuable practice.

Segmentation: When you divide your customers or employees into groups, you may do so to study their specific characteristics and behaviors so that you can tailor your offerings. You might also segment products to determine which ones sell well and identify their various levels of profitability, or rewards to see which resonate best and drive the desired behaviors.

Customer/Employee Life Cycle (CLC) Analysis: Studying customer or employee behavior at various stages, to determine things such as how long it takes a customer to upgrade from a free to a paid subscription on a website or for an employee to lose some of the initial enthusiasm/engagement they brought to the organization when they joined.

Ambient or Passive Data (aka "Data Exhaust): "There are two types of data: self-reported and ambient. Self-reported data involves filling out time sheets, surveys, performance evaluations, and expense reports—all examples of this type of data. Ambient data is information about a behavior that is automatically collected without the user's having to actively enter each data point. Swiping into work with an active RFID badge, sending emails, making calls, and even adding events to an electronic calendar are all examples of ambient data" (Segal et al. 2014).

Datafication, or Digitization: Refers to taking information about all things under the sun—including elements we never used to think of as information at all, such as a person's location, the vibrations of an engine, or the stress on a bridge—and transforming it into a data format to make it quantified. This allows us to use the information in new ways, such as predictive analytics: detecting that an engine is prone to a breakdown based on the heat or vibrations that it produces. As a result, we can unlock the implicit, latent value of the information.

Descriptive Analytics: The first and easiest type of analytics; the one most organizations perform, looks back at what happened in the past. These descriptive analytics uncover trends and typically display them in charts or on dashboards. The information can alert leaders to future problems or opportunities. Good descriptive analysis results from asking questions about the variables and how they might affect one another. Many questions might lead to one or a few valuable insights, but those insights can have tremendous impact. For example, you might learn that sales revenue is more a function of opportunities raised, combination of products pitched, and attendance at a particular course, than tenure of sales rep, size of territory, and past performance. Analysts must take caution not to influence the results by seeking data that fits their hypotheses. Go beyond descriptive analytics to better understand why variables impact each other and to avoid relying on imperfect conclusions from what is the least rigorous of the four levels of analysis.

Diagnostic Analytics: At this stage, you ask why something happened. Here you'll use more advanced statistical techniques to uncover the connections between data. For example, by using techniques to isolate dozens of variables against just one, you can often determine which causes the effect. Diagnostic analyses helps you determine, for example, what makes some of your sales reps highly effective while others languish. With this information, you can design better training, coach reps in the precise areas they require help, and hire new reps in a more targeted fashion.

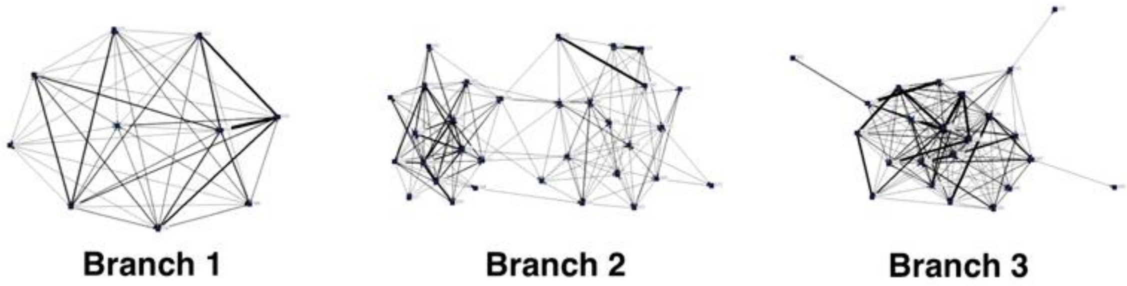
Predictive Analytics: The four levels of analysis don't necessarily work only in sequence. Normally, however, you'll graduate from descriptive to diagnostic to predictive, because after you know what and why, you'll want to leverage the data into even more valuable insights. By running your data through thousands, even millions of possible connections and correlations, algorithms can make startlingly accurate projections about the future. In sales, this might include predictions about which prospects will buy what products, and even why. To achieve this level of insight, use large datasets to "train" your predictive models. You might have a year's worth of data about particular KPIs concerning your sales reps, for example. Suppose you want to test how accurately performance against those KPIs predicts actual sales. To do so, take the first six months of KPIs for half your sales reps (first half) and add the full year of actual sales data concerning those reps. Process the data to determine the strength of the connection between the KPIs and sales, this becomes your predictive model. If your predictive model is strong enough, you'll want to use it to make decisions. But you need to test it first. To do so, take the KPI data for the other (second) half of your reps and run that against the same model. Separately, run your second half reps' KPI data against their own full year sales results data. The smaller the difference in outcomes between the two, the more valid your predictive model.

Prescriptive Analytics: Knowing what happened, why it happened and what might happen next leads to the logical question, what should we do about it? Prescriptive analytics uses highly sophisticated algorithms to build on predictive data to suggest optimal decisions and their consequences. The results from prescriptive analytics can give individual sales reps personalized action plans, for example, detailing exactly what they should do to make more sales. For example, which products to bundle for which customers, what training classes to attend and when and which prospects to prioritize based on probability models that forecast likelihood of closing.

Social Listening: "Many brands now employ artificial intelligence to monitor social media platforms, a practice known as social listening. With a sophisticated understanding of human language, AI can analyze social media trends to detect changes in conversations, alerting human operatives to changes in conversations about the brand or gathering information about the feelings of their customers." (Digiday; sysomos, 2017)

Organizational Network Analysis (AKA Social Network Analysis): For at least the past two decades, organizations have been able to gain deep insight into the way information and knowledge flows in their organizations through ONA (Cross and Parker, *The Hidden Power of Social Networks: Understanding How Work Really Gets Done in Organizations*, 2004). A typical ONA might collect data from email records and/or an employee survey, possibly even wearable sensors to build a map of the real networks at play inside organizations, including who talks to who, where people are isolated, etc. (see Figure Three below)

Figure Three: ONA Maps for Three Bank Branches



To illustrate the usefulness of ONA, Figure Three depicts three bank branches that do the same work in locations across a region. Branch 1outperforms Branch 2 by about 250% and Branch 3 by a little bit less. The ONA gives us clues. In Branch 1 managers had implemented an informal reward program, a target for the whole branch that if hit, earned everyone a bonus. The rewards incentivized employees to share information and they did. That is visible in the ONA map for Branch 1 where there are many connections and no outliers.

Managers in Branches A and B used individual incentives based on more traditional and quantifiable performance outcomes, such as loans underwritten. Where group incentives caused people to share in Branch 1, individual incentives have the opposite effect in the other Branches. Branch A outperformed Branches 2 and 3 significantly based on the same direct, quantifiable measures the other branches tried to incentivize.

From this, the bank surmised that group incentives, at least in this case, work better than individual ones. All of the bank's branches now use the same team-based incentives as Branch A. Sales have increased across the bank by more than one billion euros each year since (Waber, President & CEO, Humanyze, visiting scientist MIT Labs, 2018).