The 11 Principles of
Applied Analytics

How to Use Analytics to Create Value, Enhance Your Business and Disrupt Your Industry

GeorgianPartners

Introduction

At Georgian Partners, we have developed a thesis that software and information services companies can increase their value to shareholders and customers by leveraging the convergence of 1) deep domain knowledge around a business process, 2) exploitation of big data software platforms and 3) the information rights to use relevant data. We call this "applied analytics."

Early examples of applied analytics in use can be seen in online retail, social networking and other large-scale Internet platforms.

Many leading Internet companies provide applications that are inherently data driven,[1] leveraging analytics over massive data sets that they hold rights to. They also do so in such a way that the insights are directly imbedded into the business (e.g., advertising or product recommendations). The adoption of this applied analytics model is now occurring in all software application categories including solutions for telecommunications, healthcare, finance, retail, security and media consumption.

Business
Processes

Big Data

Information
Rights
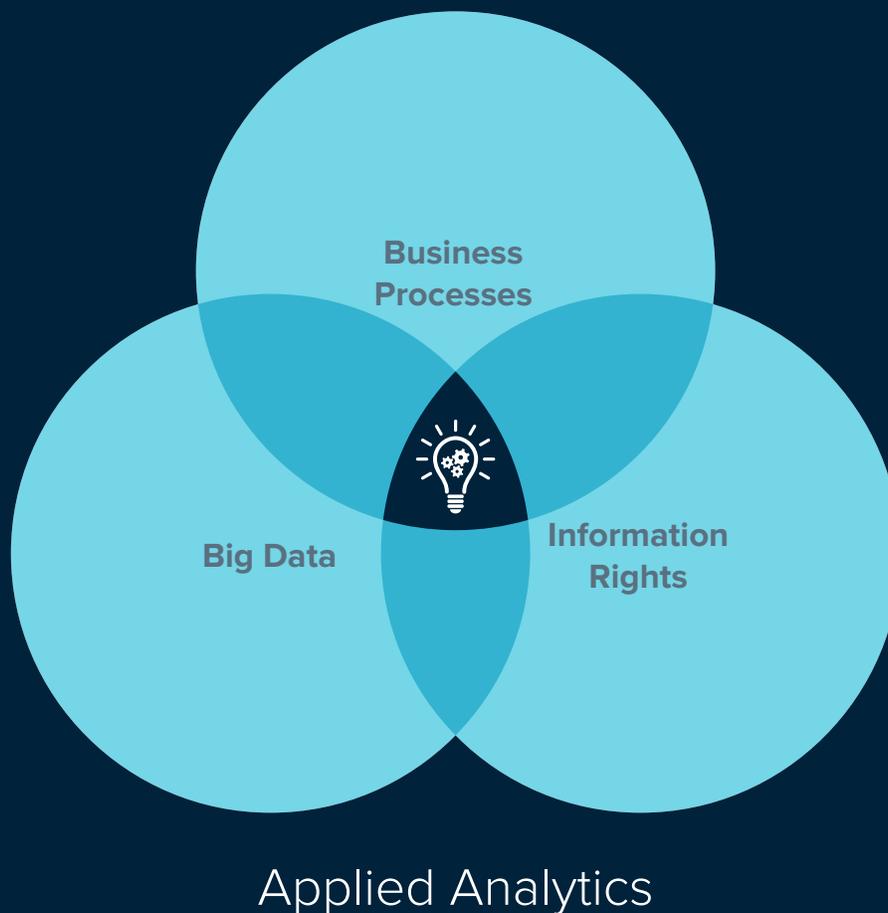
Applied Analytics

1. DJ Patil, "Building Data Science Teams," O'Reilly Radar, September 16, 2011.

How to Use This White Paper

This white paper introduces the principles of applied analytics, a framework and a maturity model that assist in the understanding of applied analytics. These principles bring structure to a complex and often misunderstood topic, and can be an important tool when executing an applied analytics strategy.

Applied Analytics Framework

The principles are grouped into five areas as shown in the framework below. The purpose of this grouping is to separate the principles into areas that should be independent of each other. This is useful for avoiding the two most common mistakes companies make: starting with the data instead of the insights and failing to look at delivery independent of analytic tooling.

Start with the Insights

Data	Analytics	Delivery

Governance & Compliance

The 11 Principles of Applied Analytics

Adopting the principles of applied analytics will be an evolutionary process for any organization. The starting point for one organization vs. another will vary, although all can work toward higher levels of adoption of each of the principles over time. The applied analytics maturity model on the next page and featured throughout this white paper is a tool that can be used to measure and monitor progress toward that adoption. Our model shows three levels of maturity that you can use to measure how widely a particular principle has been adopted within your organization.

Start with the insights

1 // Understand the process.

2 // Identify and prioritize the most valuable insights.

Data

3 // Create a data set that is unique and broad.

4 // Recognize that raw data alone is of little or no value.

Analytics

5 // Insights are more valuable the closer they are to being actionable.

6 // Leverage the shortage of data scientists to your advantage.

Delivery

7 // Separate analytic insight from how it's consumed.

8 // Inject insights into business processes at the moment of highest impact.

Governance and compliance

9 // It's not about "owning" the data.

10 // Governance and compliance is a foundational discipline.

Lead by example

11 // Be analytical in your own business.

Maturity Levels

Delivering what's expected

Your customers receive data about the execution of their own business processes. That data requires further customer interpretation and business judgment before it can be used to improve their processes. Your customers expect this level of support, and aren't generally willing to pay extra for it.

Becoming insightful

Your customers are starting to see insights from more broadly aggregated data, with the potential to impact a wider set of their business processes. While further interpretation may still be required, the insights are easier to apply, and will provide higher business value. Since this level of maturity offers your customers some unique and valuable insights that they can't obtain on their own, they'll be willing to pay for them.

Actionable, optimized, integrated insights

At the highest level of maturity, you're providing insights from the broadest set of available data, well be way will have the highest customer value and can enjoy premium pricing.

Case Study

LoyaltyInsight

Small- to medium-sized merchants have historically used informal, manual or card-based systems to implement customer loyalty programs, such as frequent visit discount cards. More recently, a number of social and mobile apps have emerged with a variety of different approaches that enable merchants to track customer usage as the foundation of a marketing program.

LoyaltyInsight is a mobile and online loyalty management solution that tracks customer visits, customer spend, and offer response, enabling targeted offers and rewards. The solution supports both brick and mortar and online merchants, allowing them to drive increased revenue from high-value repeat customers. The LoyaltyInsight solution is delivered via a Software as a Service (SaaS) model as both web and merchant/customer-facing smart phone apps.

Automating what was a simple manual application as part of a marketing automation program is an excellent base. We will now take LoyaltyInsight through our applied analytics approach to expand beyond basic reporting on key performance indicators (KPIs) to drive new revenue growth from applied analytic capabilities.

The founder of LoyaltyInsight has embraced applied analytics as a core growth strategy. It was only once the company had achieved critical mass in its customer base that the founder saw there was significant opportunity and value in the data they were managing. The company has already implemented a number of analytic innovations and plans to do more.

Principle 1:
Understand the entire process.

Not just the process you control, but the entire process from the customer's point of view.

When implementing analytics, companies often limit themselves by only thinking about the data they already have access to or the analytics technologies they currently understand. A better approach is to instead focus on identifying what the most actionable and valuable insights are that could change outcomes in the business process that your solution drives. Companies can achieve this understanding by first mapping out key business processes and then identifying KPIs that measure the process. From this, any potential information gaps that may exist will be revealed.

It's possible to develop a much stronger understanding of the insights needed to drive improvements by analyzing of the business process. It also helps to step back and look more broadly at how specific aspects of the business process interconnect with the solutions around it. This creates a better understanding of the wider process flows and what insights are going to be relevant across that ecosystem. All commerce solutions, for example, would interact with payment vendors (e.g., digital wallets) and marketing platforms (e.g., for making offers), among other systems. These provide data that can be leveraged.

It's important to look at audiences for insights once there's a deeper understanding of the wider processes. First consider the existing audience for an insight. Then look at the wider spectrum of people, businesses and participants across an ecosystem that could acquire value from an insight.

Applied analytics enables LoyaltyInsight to deepen customer insights

Manual loyalty programs only track customer activity at the time of purchase, e.g., buy ten cups of coffee and get the eleventh one free. But with LoyaltyInsight the merchant captures a record of the purchase action, including the digital redemption of an offer providing clear benefits over non-digital solutions in terms of closed loop insights. However, the full customer purchase cycle actually spans:

- *Creating and making offers*
- *Tracking details of purchase activity*
- *Managing follow-up communications with the customers*

LoyaltyInsight is currently at level one on the maturity model when it comes to understanding the entire process. The company has a deep understanding of the core loyalty process; however, insights are not being integrated into the broader merchant environment that includes point-of-sale systems, financial management software and inventory management solutions. For example, while LoyaltyInsight provides insight into the spending patterns of participating customers, it doesn't integrate with point-of-sale systems to enable comparisons with overall average spend per customer.

Potential audiences within a single organization might include field staff or call center staff supporting customers, regional managers, the CEO, CFO, the Chief Compliance Officer and the customers themselves (i.e., your customer's customers).

Third-party players who hold governance or regulatory roles, or third parties who provide complementary services to a solution are likely to be additional audiences. In short, there can be many audiences, each with quite different views on which insights are valuable. This presents opportunities to monetize insights.

Finally, companies already providing some sort of reporting or insight capability can ask users what they are doing with a particular report or insight. What does it tell them? Do they then combine it with other reports from other systems? Or do they use it with a different tool outside of the reporting environment to refine it further? Understanding how users are consuming existing data and reports can be very insightful and a great way to gather product requirements and ideas.

Maturity Levels

1. **Within your company's solution.** At this level your company will have a deep understanding of the business process your solution delivers or influences but not the wider context.

2. **Entire customer process.** A company at this level of maturity not only understands the core business process, but also how it integrates into and interacts with the wider customer environment.

3. **Entire ecosystem.** A company at this level understands a wide ecosystem of both internal and external business processes including suppliers, distributors, partners and government regulators, etc.

LoyaltyInsight identifies new audiences

The primary audience for insights from the LoyaltyInsight solution is the manager / owner or senior staff. However, other potential audiences include the consumers themselves (where they are spending money, getting the best discounts, visiting popular locations), and suppliers who are partnering with a LoyaltyInsight merchant to support a special offer of their product or service through another channel.

For larger customers of LoyaltyInsight (e.g., nationwide chains), users might include marketing staff that set budgets and define programs as well as financial staff or the CEO looking at issues of profitability across locations or regions.

Principle 2:
Identify and prioritize the most valuable insights.

The value of analytic impact = value of insight x degree of refinement x consumption.

Budgets are always limited and not all analytic insights are of equal value, so it's important to attempt to quantify the impact of one insight vs. another on the business. When attempting to rank the relative value of various analytic opportunities, consider not just the value of a particular individual insight but also the extent to which it has been refined as well as how widely it can be used across an organization.

The extent to which an insight has been refined to minimize or eliminate the need for user interpretation is an important consideration. Raw insights that require significant interpretation represent less value overall. Having a view of organizational impact is also important because some insights that at first appear to have small incremental value, can have significant value when used widely or as part of an automated process across the wider organization. While the individual value may be lower, the overall impact of the insight may be greater due to wide usage. A single business intelligence report showing your board of directors a gap in the market being targeted could

be worth millions of dollars but used only once. On the other hand, analytics that proactively prevent fraudulent banking transactions before they occur can ensure the validity of millions of customer interactions every year.

For that reason, it's important to not only look at the individual impact that a new insight is having, but also the extent to which it can be consumed across the potential audiences for that insight. This can be thought of as a simple equation where the overall value of an analytic impact is the product of the value of an individual insight multiplied by the number of times that insight can be consumed across an organization (analytic impact = value of insight x degree of refinement x consumption).

The ultimate test of whether or not an insight has real value or is just a nice to have is determined by whether a customer is willing to pay for the insight. Regardless if the customer is new or not, knowing if an insight can be charged for helps focus teams on those opportunities that will quickly drive revenue and company value.

1. **Low value, lower refinement, limited number of people.** Little refinement of the insights (e.g., generic reports) means significant interpretation is required. Insights are typically of low incremental value and are used by a limited number of people in the organization.

2. **High value, high refinement, limited number of people.** Insights are highly refined and therefore directly actionable. Individual insights tend to be of high incremental value, but those insights will only be used by a few people in the organization such as a handful of managers or senior executives.

3. **Low value, high refinement, mass consumption.** Insights are highly refined and therefore directly actionable. In addition to delivering high value insights, more tactical, lower value insights are used broadly across the organization.

LoyaltyInsight drives new revenue from analytic insights

In terms of identifying and prioritizing the most valuable insights, LoyaltyInsight is operating at maturity level two. It provides bundled reports to the merchant detailing KPIs such as average revenue per participant. It also advises merchant about potential actions to take, such as increasing discount levels for certain customer segments.

LoyaltyInsight also provides additional price reports that show merchants how they compare against other similar merchants and suggests actions to improve performance further. The next step will be to enable these types of insights for frontline customer service staff and to embed the insights into the offer-creation process to ensure the most targeted and effective offers are being generated. In this way the insights will be embedded in every touch point with the consumer. That, in turn, will drive the maximum consumption of the insights.

Principle 3:
Create a dataset that is unique and broad.

The ultimate goal is to create a dataset that no one else can duplicate, and that uses data from across a market ecosystem.

A dataset that is unique and broad will draw data from the widest range of sources, ideally with exclusive usage rights allowing the creation of a rich set of insights. Such a dataset would be difficult for a competitor — or a potential customer — to duplicate, creating a barrier for others to provide the same insights. Creating such a dataset will largely be a function of two key factors: the ability to gain access to the right data under contract or by usage tracking, and the extent to which your rights to use the data are exclusive.

Gaining access to the right data involves both securing the rights to use customer data for the purpose of analytics, as well as sourcing information from third parties. At a minimum, you need the right to use customer-generated data including core transaction data and usage information or other so-called exhaust data. You should seek the right to aggregate that data (once anonymized) to enable benchmarking of individual performance vs. others, or to look for broad trends across a population. You may also integrate data from third parties, such as demographic data, to improve the utility of the overall dataset.

Having exclusive rights to data can create significant value. The primary source of exclusive data will be data generated through the usage of a company's platform, application or a business process that it controls. While that data can be used and even exported by an individual user, it would be difficult or impossible for a third party to recreate the entire dataset with all users. Facebook, LinkedIn and Google Analytics are all examples of where an individual user can export their individual information but the company retains rights to that data and exclusively controls the ability for third parties to access it for such purposes as advertising.

A second opportunity for a company to create exclusive rights to data is through the generation of derived data. This occurs when the company is able to apply an algorithm or process to derive data that represents some new insight such as a reputation or credit score. Finally, a company may also be able to obtain some measure of exclusivity using third-party data, either through exclusive licensing terms or as a result of other barriers such as the cost or complexity of managing the data.

Maturity Levels

1. **Data available for analytics limited to a single customer.** Your insights are based on data from a single customer rather than a wider group of customers.

2. **Aggregation of data across multiple customers, use of data exhaust.** Your dataset aggregates anonymized customer data for benchmarking and analytic model development. You're also creating derived data (e.g., scoring) and utilizing exhaust data (e.g., application usage data).

3. **Incorporation of third-party data, some exclusive rights.** Your dataset incorporates externally sourced data and has secured some exclusive data rights. Customers may be providing rights to the data created in their other systems.

LoyaltyInsight creates value from unique data

In terms of creating a dataset that is unique and broad, LoyaltyInsight is operating at a level two maturity. In addition to reporting on individual merchant performance, LoyaltyInsight has secured the rights to aggregate individual merchant data together for the purpose of benchmarking relative performance and to generate new analytic models. Merchants can now compare their individual performance with others and LoyaltyInsight will be able to deliver insights that highlight long-term merchant performance.

The company is now also storing derived data in the form of merchant scores to simplify merchant benchmarking as well as "customer scores" intended to help better match offers to consumers.

The next step will be to begin to integrate third-party demographic data for a given area, enabling comparisons of actual customer data with local demographic information. This will help merchants understand which segments of the local market they are successfully targeting. The company is also looking into what sort of agreements it can secure with location data suppliers to provide exclusive access to location-based information for loyalty applications.

Principle 4:
Raw data is of little or no value.

Simply storing as much data as possible isn't useful; data should be processed into a refined state to support insights.

Large data storage and analysis have traditionally been the domain of enterprises with significant IT budgets to spend on expensive parallel hardware and software. This has changed with the availability of commodity and open source parallel processing platforms, such as Hadoop, and the economics of cloud computing infrastructure and commodity hardware.

It's now possible for smaller organizations to store and analyze big data with more modest IT budgets. However, just because a company is able to store more data from more sources doesn't necessarily make that data valuable. In fact, data in its unrefined state may be of little or no value and could lead to what is becoming known as data obesity.[2]

Rather than simply storing ever-growing amounts of data, companies need to get data into a refined state that supports current and future analytic processing needs. This operational capability should include providing data validation, cleansing and de-duplication, data integrity checks, creation of aggregates and, importantly, standardization of the structures and definitions of data through techniques such as master data management.

The use of a common data model is particularly important where multiple data sets are being brought together to provide new insights. Only when these foundational capabilities are present will a company be in a position to get the most value out of the data it has access to.

2. Mary Meeker, "Internet Trends," Kleiner, Perkins, Caufield and Buyers, May 30, 2012.

Maturity Levels

1. **Unrefined dump of transactional data, limited historical data.** The data you have available for analytics is largely unrefined and is only from the core application. There's little or no historical data available.

2. **All data available, limited refinement for specific insights.** Your company has the infrastructure, e.g., Hadoop, to manage large volumes of data for analytic use. That data may have been normalized and cleansed in targeted areas only for specific analytic requirements.

3. **Highly refined data stored to support broad analytic use.** Your company has a master data model for analytics where data is mapped into a common format to enable analytic use. Processes are in place for normalization, ETL, data profiling, data quality, metadata management, master data management, etc., to support a broad range of analytic requirements.

LoyaltyInsight maximizes the use of its data

LoyaltyInsight is at level two maturity in terms of its data refinement. It keeps a record of every offer made. By keeping this data, LoyaltyInsight is already providing insights into long-term offer effectiveness. The data is kept online in a Hadoop cluster.

Using this approach, LoyaltyInsight retains all transactional data across all companies (anonymized) and is able to use this to identify seasonal trends over multiple years. The old days of companies similar to LoyaltyInsight having to keep a limited historical set of data have been pre-empted by inexpensive storage.

While LoyaltyInsight does not yet have a common master schema across all aspects of its solution, it's planning to expand from its current focus on offer effectiveness to include social graph, location and demographic information. It has also started to assign unique ID numbers to all merchants and consumers to enable broader analytic insights over time such as tracking consumer movements between merchants.

Principle 5:

Insights are more valuable the closer they are to being actionable.

Minimize the amount of interpretation and effort required to take action.

Your goal should be to minimize the effort required by a user or a downstream process to turn an insight into an action. That effort is the analytic delta, and the closer that any insight is to something from which an action could be taken, the smaller the delta will be. Examples include where users have to manipulate reports, export raw data, perform their own calculations or merge datasets to get the insights they require. Your goal should be to find ways to make the insights more actionable and reduce the user effort.

LoyaltyInsight minimizes merchant effort

LoyaltyInsight is operating at level two maturity in terms of making its insights actionable. Originally, LoyaltyInsight provided basic reports to its merchants about what amount of product they had sold at what price for customers in the system. Since it didn't integrate point-of-sale data, comparisons to average customer spend overall were manual. There was also no easy way to compare performance to other complementary or competing merchants. In addition, merchants were left to figure out what that meant and to take action.

LoyaltyInsight now provides more complete insights including integrating point-of-sale and comparative merchant data that shows historical competitiveness vs. the market. The insights, however, still require some interpretation by the merchant before the action can be taken. The next step for LoyaltyInsight is to predict what the insights mean and provide a recommended action for the merchant to approve.

Maturity Levels

1. **Insights are incomplete and require human interpretation.** Before an action can be taken, users need to interpret the insights and may need to integrate other data or related insights.

2. **Insight is complete but still requires human interpretation.** Analytic output is complete, but users must interpret the results and then take action.

3. **No interpretation required, the insight is directly actionable.** The insight comes in the form of either a recommendation taken by a user or an automated behavior such as a rule being executed or an API request / response.

Principle 6:

Leverage the shortage of data scientists to your advantage.

The scarcity of people with analytical and data science skills will allow you to drive higher margins through new analytic insights in your product.

There's a significant shortage of skills related to big data and analytics. This is resulting in a highly competitive market for both data scientists and software infrastructure specialists with skills in managing big data platforms such as Hadoop. There are two key types of big data expertise in particular that organizations need to consider:

1. Data Science: The deep understanding of analysis techniques, algorithms and math required to create new insights from data.

2. Big Data Infrastructure: The engineering skills to build and maintain the necessary storage and analysis platforms to support big data analysis.

The good news is that companies delivering insights from big data as a solution, or part of a wider offering, will be at an advantage in the battle to build big data and analytics capabilities. Compared to end-user organizations, these solution providers have access to pools of data and challenges that are more interesting to top data scientists and engineers alike.

Few corporations, for example, will have access to the aggregated data that many SaaS companies are building as a by-product of providing the solution to multiple organizations. These companies can also afford to pay a premium because the value of the insights will be amplified across a large number of customers.

Organizations are scrambling to find these skills and have realized the largest concentration of skilled data scientists hold actuarial jobs within insurance companies, working as quants on Wall Street and as risk analysts in banks. Most are very well paid, and the pay is improving with the rise in demand. An increasing number of schools are also offering big data and analytics graduate courses to help train more people. Importantly, data scientists need to have a strong background in mathematics to get the most out of your data.

Because big data engineers with real-world experience at scale are also hard to find, the best option is likely to engage hands-on engineers and architects with a solid background in data management. These experts have the potential to lead the experimentation, whether the work is done entirely in-house or leveraging one of the emerging specialist big data consulting firms.

Maturity Levels

1. **Customers export your data and perform analytics in house.** Your customers have employees with data science skills and export data from the solution to integrate into their analytic environments. However, there are limited opportunities for monetization.

2. **Analytic skills are spread between you and your customers.** While your solution refines insights to a level where they can be monetized, your customers still see the need to refine those insights further themselves. Your customers have in-house data science skills and data to support that refinement.

3. **You're hiring the best data scientists and providing all the insights your customers need.** Your customers don't see the need for in-house data science skills because your solution is not only providing all the required insights, but also better quality insights than they could achieve on their own.

LoyaltyInsight engages expertise to enhance capabilities

LoyaltyInsight is operating at a level three maturity in its ability to exploit the shortage of big data skills. The analytic product capabilities that LoyaltyInsight now delivers to its customers would otherwise be out of reach for all but the most sophisticated merchants. It employs both big data infrastructure staff (e.g., to manage a Hadoop cluster and Hive) along with a data scientist focused on creating new insights. LoyaltyInsight then delivers those capabilities through Cloud-based analytic product features. The barriers to entry for those wanting to reproduce the analytic capabilities in house are significant, and no one customer, no matter how large, could reproduce the same insights due to the unique dataset that LoyaltyInsight has.

Principle 7:
Separate analytical insight from how it's consumed.

Don't let your choice of analytic tool define your delivery method.

You shouldn't limit your options for delivering insights to the particular analytic tool or platform your organization knows best or has access to today. Even experienced analytic organizations won't typically take a broad enough view of how insights could be delivered across the organization. This will often occur when an organization takes a narrow view of its potential audience, such as focusing exclusively on delivering reports to managers or power users. As a result, many companies still overlook the potential value of delivering insights via an API accessible from within an automated business processes.

Consider the full spectrum of delivery techniques when evaluating delivery approaches, including reports, dashboards, search and query UIs, alerts, rules engines, and APIs / Insight as a Service. A particular insight can be better suited to one option over another, but building an analytic architecture that can support a full range of delivery options should be the goal. One scenario may require a high level of automation via an API, such as a fraud check for every customer transaction, while other scenarios will require a human interpreted report.

1. **Users must seek out the insight.**
   The delivery method is a standalone analytic tool; users must proactively seek the insight by leaving their application environment to use the tool.

2. **Users are notified of events and insights.** Users are able to get alerts that new insights are available, but still need to use a stand-alone tool or application to consume them.

3. **API delivery of insight enables direct injection into a business process.**
   All insights can be accessed via an API that enables the seamless integration of insights into user workflows (e.g., within a third-party mobile application).

LoyaltyInsight diversifies its analytic insights

LoyaltyInsight is operating at level three in terms of its maturity for delivering analytic insights. Analytic insights are delivered in many ways from basic reports in a dedicated environment to alerts on a point-of-sale terminal and on merchants' smartphones.

Because in most customer environments the solution is replacing a manual process, the application is the primary tool and the insights are imbedded in that tool.

Mobile and point-of-sale integration are enabled via a real-time API that enables third-party solution providers to incorporate insights into their environments. While the majority of users access insights via the merchant, new applications can now be created outside of LoyaltyInsight that help maintain a focus on the core insights.

Principle 8:

Inject insights into business processes at the moments of highest impact.

Increase the value of those insights by automating delivery to increase consumption.

The objective of applied analytics is to enable insights that have an impact on a business process at the right time and in the most appropriate way for that process. For some processes that will mean automated delivery to an experienced employee (e.g., via alerts, reports and dashboards), and in others it might mean an automated decision or rule integrated directly into a business process that doesn't require any additional employee input.

If a retailer or a bank obtains a monthly report listing all of the fraud that has occurred in the past 30 days, it can change processes in the future to try to reduce that fraud. However, the organization can potentially make changes to its business by generating daily insights. A month of fraud could be reduced to one day. If an insight is provided in real time, as an API call within the transaction process, it would enable the parties to stop a transaction before it's completed.

LoyaltyInsight: Insights allow for timely interventions

LoyaltyInsight is a level two maturity company in its ability to insert insights at the point of highest impact. The company provides daily insights to merchants that give them recommendations about which customers to target with which offers and at what time.

To move to a level three maturity, the insights would have to be pushed into the offer creation process and the merchant provided with offers to approve. Alternatively, the offers could be made automatically. For example, when a customer has checked in or redeemed a coupon at another merchant nearby, an offer could be made to that customer. By automatically inserting the insight (past behavior, best offer to make and proximity) into the offer creation process, and automatically generating and delivering the offer, LoyaltyInsight is able to maximize the chance of that customer visiting the merchant at that point in time.

Maturity Levels

1. **Insights are provided after the fact.** Insights are delivered as historical reports on past performance or events.

2. **Real-time delivery to a person who then takes action.** Insights are delivered within a larger application or in an analytic dashboard. The insights arrive as events are happening but require human intervention for action to occur.

3. **Automatic insertion of insights into business processes.** The action is automatic and integrated into the business process at the point that ensures the most significant positive impact.

Principle 9:
It's not about owning the data.

What you require is the right to use the data and ensure that your use of that data complies with both regulations and marketplace expectations.

Whether you own a particular set of data or not is less relevant than what your rights to use that data are. That's because owning data doesn't guarantee the right to use it, while a lack of ownership doesn't necessarily preclude its use.

Instead, it's more useful to consider the information rights, the various contractual agreements in place, and any legislative restrictions and social norms that govern how that data can be used. For example, you will almost always need customers' permission before disclosing their name and address, even though you might own that data.

Once secured, these information rights will become the basis for an applied analytics strategy, enabling you to acquire, store and enhance a wide range of data; produce new products or services; and ultimately realize an increase in value of your business through an acquisition or fund-raising process. These rights may come from customers directly (and/or their end users, i.e., your customers' customers), from usage of the system by customers or their end users, from third parties, or from public sources. The ability to merge datasets is a particularly important type of right. This is a process that some organizations will view with suspicion.

Concerns about using aggregated data can be addressed in part by ensuring that insights are based on datasets that protect individual and organisational privacy. Nevertheless, it still may be possible to extract valuable insights from the data. A cloud-based eCommerce platform could, for example, provide insights into the relative effectiveness of one social media channel vs. another as a referring source to online stores (Facebook vs. Twitter vs. Pinterest) without revealing any customer-specific data.

You should try to acquire rights early in your relationship with your customers. It's harder to obtain rights to data after the initial contracting process. A balancing act is needed to acquire those rights without the issue becoming an inhibitor to the sales process.

When problems do arise during the process of contracting data rights it's likely to be because of one or both of the following issues:

1. You haven't clearly explained what's in it for your customer.

2. The clause associated with these rights is too complex.

It's critical to clearly articulate how your customers will benefit from having their data included in an anonymous data pool. It's also important to have easy-to-understand boilerplate language in the contract. In addition, it's worth noting that it's important to adopt a standardized approach to data rights. If some customers grant certain rights but others exclude those rights, it will be very difficult to deliver benchmarking or insights that span multiple customers.

Maturity Levels

1. **Rights to deliver insights based on a single company's data.** Information rights only allow insights to be generated from a one organisations data at a time. There is no aggregation of data.

2. **Rights to aggregate data for benchmarking and analytic model creation.** You have the rights to aggregate data that isn't considered highly sensitive enabling insights based on the entire population of data, with key elements anonymized. Applications include benchmarking and the creation new analytic models based on multiple companies' data.

3. **Broad rights to use all required data.** You have established enough trust with your customers and their end users to allow the use of data that would ordinarily be considered too sensitive. The combination of that trust and the business value gained by using the insights derived by analyzing that data outweigh concerns.

LoyaltyInsight identifies a path to successful data acquisition

As a level two company in terms of its data rights, LoyaltyInsight has secured substantial rights to use aggregated data. Securing the rights to aggregate data from their merchant customers was made possible in part by clearly articulating the benefits of doing so to the merchants. Merchants are shown direct benefits such as the ability to benchmark themselves against similar merchants, and the company shows that it has best practice security and privacy controls to support that.

The next steps for the company will be to support its broader analytic goals with even broader information rights, such as having access to end-user location data, and to combine third-party data such as demographic information to support the creation of more effective offers.

Principle 10:

Governance and compliance is a foundational discipline.

The absence of a proactive strategy results in ad hoc and reactive responses to events.

Taking a proactive approach to privacy by, for example, adopting the '7 Principles of Privacy',[3] should be a top priority. Once informational rights are secured, it's critical that they be integrated into your company's operations with clear policies in place since many key governance and compliance risks relate to data privacy.

Any strategic approach to governance and compliance within a broader applied analytics strategy should also look at the issue of customer business continuity. As the insights provided become more valued and tightly integrated into a customer's business processes, the greater the impact of any outage, data quality issues or even faulty insights (e.g., false positives). The more successful your company is at implementing an applied analytics strategy that drives value within your customers' processes, the greater the potential exposure to their businesses.

Proactive companies will therefore look at the range of risks that the company has taken on as part of implementing an applied analytics strategy, including:

- **Operational risk.** This includes any risk to hacking or exposures due to the company storing data in the cloud.

- **Regulatory Risk.** Identifying reports required by government agencies and other standards of compliance, such as SAS70.

- **Market Risk.** It's important to understand market volatility in the court of public opinion, as CarrierIQ[4] and Path[5] both discovered.

You also have to consider the threat of any negative press that might ensue in addition to issues that traditionally rile the public. Target, for example, discovered that despite owning the data, having certain insights about customers, and acting on those insights, can lead to negative consumer and media attention.[6]

3. Ann Cavoukian, "Privacy by Design: The 7 Foundational Principles," Internet Architecture Board, March 2011.

4. Dieter Bohn, "Carrier IQ taking steps to rebuild its reputation," The Washington Post, May 8, 2012.

5. Jon Mitchell, "The Price of Free: Path Uploads Entire Address Book To Its Servers," ReadWrite, February 7, 2012.

6. Charles Duhigg, "How Companies Learn Your Secrets," The New York Times Magazine, February 16, 2012.

Maturity Levels

1. **Meeting legal requirements, difficult to prove compliance.** You're meeting the minimum requirements of the appropriate laws, although demonstrating compliance with those laws would be challenging if required.

2. **Meeting both legal and marketplace expectations, able to prove compliance.** You're able to quickly show that you're meeting legal and marketplace expectations of privacy and security, etc.

3. **Adopting a market leadership position on compliance issues.** You're actively influencing the standards for the industry from both a marketplace and regulatory perspective.

LoyaltyInsight places critical importance on regulatory compliance

LoyaltyInsight is operating at a level two maturity in terms of making governance and compliance a foundational issue and taking a proactive stance. It has considered a range of privacy and information ownership issues, especially those focused on managing customer data on behalf of merchants, as well as future issues of sensitivity toward real-time, location-based offers.

To manage market risk, LoyaltyInsight's CMO takes responsibility for overseeing privacy issues with a focus on merchant and end-user data usage. Monthly reviews of market issues are conducted and LoyaltyInsight is exploring a partnership with TRUSTe (truste.com) for external reviews.

To show compliance to its customers, and if necessary regulators, tools have been developed that report on data usage, indicating which merchants can access what data and reporting on internal access to non-anonymized data. LoyaltyInsight has also adopted the '7 Principles of Privacy' across the business (product, marketing and data management) and intends to appoint a Chief Privacy Officer in time.

Principle 11:
Be analytical in your own business.

Leverage analytics internally to optimize your operations.

Companies must analytically enable all employees. While many companies take an analytical approach to measuring certain parts of their business, fewer embrace the idea of enabling the wider organization to be more analytical as a whole. There are plenty of strong examples to learn from (LinkedIn, Zynga, Facebook and Google), where companies have embraced a data-driven approach to decision-making about their solutions and customers. Consider the types of training that staff need to become better analytic decision-makers.[7] Look for opportunities to make data available to employees so that they can experiment with it and develop a culture that expects data to back up a thesis or point of view.

For example, once staff have basic analytical skills, consider exposing employees to a data environment so that they can explore the data and test hypotheses. This might range from making sales, customer interaction and product support reports more widely available through to providing interactive tools to access appropriately protected (i.e., anonymized) customer information.

LoyaltyInsight applies its foundation analytical principles throughout the whole company

LoyaltyInsight was founded on the concept of analytical decision-making and uses this approach across all aspects of its business. It has achieved a level two maturity where data science is a key part of the senior management decision-making process. Each group (sales and marketing, product management, customer support) has a monthly ops review meeting in which it reviews tactical issues and progress on longer-term projects.

LoyaltyInsight provides staff access to key performance indicators via dashboards that track how well the company is doing. These KPIs are across user engagement, marketing effectiveness and value / revenue driven for merchants by the LoyaltyInsight solution.

LoyaltyInsight is moving toward level three maturity by planning to provide training for most staff in the fundamentals of data science, including the use of statistical analysis techniques. It intends to provide access to all critical business data as part of its data exploration environment to encourage staff to perform open-ended analysis to find new patterns.

7. For additional information on this point, see "Analytics at Work: Smarter Decisions, Better Results" by Thomas H. Davenport, Jeanne G. Harris and Robert Morison.

Maturity Levels

1. **Data rich, analytics poor.** Data is kept track of, and reported on, but isn't used to drive improved decisions or to optimize the business.

2. **Analytics is the domain of the few.** Data scientists and analytic specialists support senior management in certain key areas of the business to drive improvement. There's limited optimization of the business with a small number of people involved, such as senior management.

3. **Analytically optimized.** Employees have access to data, tools and the training necessary to find new insights. Decisions are optimized across all business processes using a broad range of KPIs.

Conclusion

Applied analytics presents a significant opportunity for companies to create value from the convergence of business process knowledge, big data and information rights. To capture that value, you have to take a methodical approach that helps you stay focused on the broader analytic opportunity. Too often companies instead limit their thinking to a narrow set of issues. The three most common mistakes are: only focusing on the data you currently have access to; only delivering insights within the constraints of the analytic tooling; and failing to take a proactive approach toward governance and compliance.

The very first step for any company looking to bring new analytic offerings to market and drive company value through an applied analytics strategy should be to understand the starting point. The principles of applied analytics and the associated maturity model can help you with that understanding while also illustrating what a future approach to analytics could look like.

The final, and perhaps most important element of applied analytics, is to bring an analytic mindset to running a business. This is fast becoming a priority for companies in all industries and at all stages. Fact-based decision-making and data-driven prioritization of effort should be the norm. Companies should look for ways to make themselves more analytically driven starting with ensuring employees have the necessary skills to take an analytic approach to their role.

Applied Analytics Maturity Model

Principle	Level 1	Level 2	Level 3
1. Understand the entire process.	Within your company's solution.	Entire customer process.	Entire ecosystem.
2. Identify and prioritize the most valuable Insights.	Low refinement, low value, limited number of people.	High refinement, high value, limited number of people.	High refinement, low value, mass consumption.
3. Create a dataset that is unique and broad.	Data available for analytics limited to a single customer.	Aggregation of data across multiple customers, use of data exhaust.	Incorporation of third-party data, some exclusive rights.
4. Raw data is of little or no value.	Unrefined dump of transactional data, limited historical data.	All data available, limited refinement for specific insights.	Highly refined data stored to support broad analytic use.
5. Insights are more valuable the closer they are to being actionable.	Insights are incomplete and require human interpretation.	Insights are complete but require human interpretation.	No interpretation required, the insight is directly actionable.
6. Leverage the shortage of data scientists to your advantage.	Your customers are doing analytics on your data.	Analytic skills are spread between you and your customers.	You are hiring the best data scientists and providing all the insights your customers need.
7. Separate analytical insight from how it's consumed.	Users must seek out the insight.	Users are notified of events and insights.	API delivery of insight enables direct injection into a business process.
8. Inject insights into business processes at the moments of highest impact.	Insights are provided after the fact.	Real-time delivery to a person who then takes action.	Automatic insertion of insights into business processes.
9. It's not about 'owning' the data.	Rights to deliver insights based on a single company's data.	Rights to aggregate data for benchmarking and analytic model creation.	Broad rights to use all required data.
10. Governance and compliance is a foundational discipline.	Meeting legal requirements, difficult to prove compliance.	Meeting both legal and marketplace expectations, able to prove compliance.	Adopting a market leadership position on compliance issues.
11. Be analytical in your own business.	Data rich, analytics poor.	Analytics is the domain of the few.	Analytically optimized.

GeorgianPartners

About Georgian Partners

Georgian Partners is a thesis-driven growth equity firm that invests in SaaS-based business software companies. We look for companies that use foundational technology trends such as applied artificial intelligence, conversational business and security first to dominate their markets.

Founded by successful entrepreneurs and technology executives, at Georgian Partners we leverage our deep software expertise to directly impact the success of our portfolio companies. That expertise spans areas as diverse as machine learning, analytics, deep learning, cryptography, linguistics, natural language processing, differential privacy, software engineering, information security and cloud computing.