Putting People First
in Your Big Data Initiative

juicebox

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Create your big data best-seller

Big data is all we hear about these days — at conferences, in the news, in the seat next to you on your flight. Your company likely has its own big data and is using it to cut costs and rethink internal business processes. Others in your organization, like the new Chief Analytics Officer, might be thinking about ways to monetize this data and turn the data into products.

Growing the internal or external audience that finds value in your data means reaching beyond the data analysts and getting to the everyday decision makers. It also means taking a different approach, not the typical IT response of buying a business intelligence tool and expecting users to figure it out on their own. People simply don't have the time to do this.
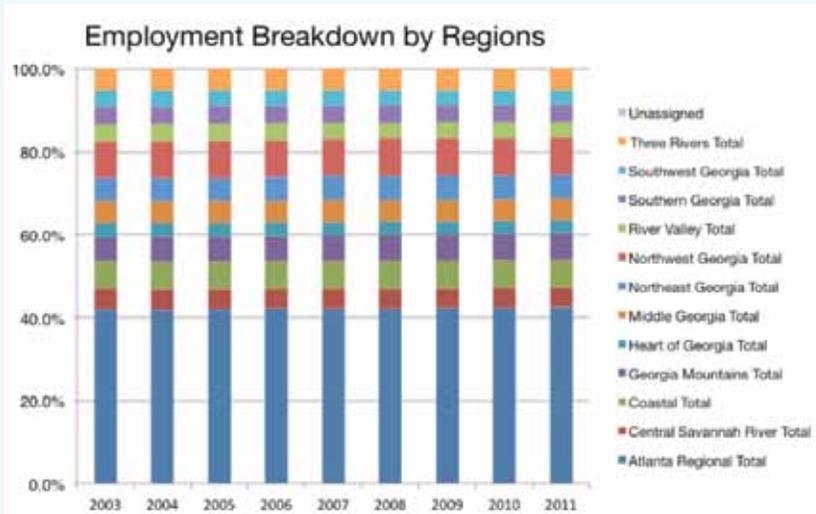
By putting people first in your big data initiative, you consider not only tools, capacity and the project plan, but how the information will be consumed by the many non-analysts inside and outside of your organization. This ebook offers a way to think about and implement solutions that put these everyday decision makers at the focal point to ensure that your big data makes a big splash.

How do you put people first? Think about your own situation. You have the resources and the data, but how can you package this information in a way that your customers and every day decision makers will find it valuable?
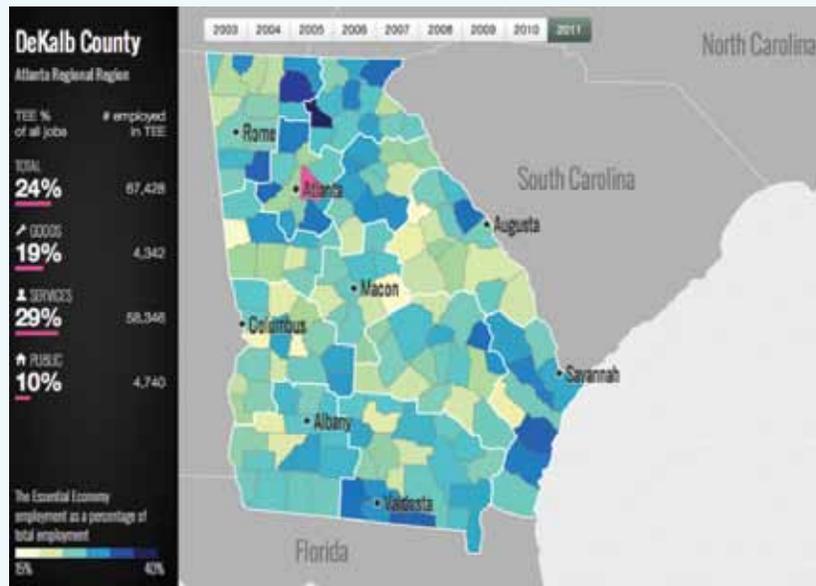
Company spotlight: Delivering insights to non-data people

For The Essential Economy (TEE), making its workforce data consumable for economic development experts and policymakers (non-data people) is critical. The organization had 10 years of North American Industry Classification System (NAICS) data and needed to make it digestible for policy influencers who don't have a data analytics background, or time to make sense of it. In knowing the desired outcome, easily understood and acted-upon data, TEEC leadership knew it had to put people first to achieve its goal. It converted tables upon tables of data into an easy-to-use app that revealed the information with simple visual cues such as clickable maps and timelines. Now, policymakers use the app to answer their labor-related questions on their own without the need to involve data analysts.

The Essential Economy - A Tale of Two Cities: Two different ways to share regional employment data

Employment Breakdown by Regions

Legend:
- Unassigned
- Three Rivers Total
- Southwest Georgia Total
- Southern Georgia Total
- River Valley Total
- Northwest Georgia Total
- Northeast Georgia Total
- Middle Georgia Total
- Heart of Georgia Total
- Georgia Mountains Total
- Coastal Total
- Central Savannah River Total
- Atlanta Regional Total

Familiar for Excel users, but not useful for everyday decision makers

DeKalb County

Atlanta Regional Region

	TEE % of all jobs	# employed in TEE
TOTAL	24%	67,428
GOODS	19%	4,342
SERVICES	29%	58,346
PUBLIC	10%	4,740

The Essential Economy employment as a percentage of total employment

A map with interactive selections and clearly dsplayed metrics based on selection

Treat your data like a novel

Think about the last great novel you read. What brought you to read it? If you loved or appreciated it, what did you do next? Did you just keep it to yourself?

Big data initiatives are a lot like the launch of a popular novel. There are many out there, but only a few can really change the way we think. The key to creating that next best-seller with your data is to think like a best-selling author. Consider what makes a novel successful. Sure, it has to be a great story, like your great data, but dig a little deeper to discover the elements that the novelist used to go from good to great.

First: Put yourself in the reader's shoes. Think back to a book you loved. How did it make you feel? While reading, did you identify with a character or relate to a situation? The author spent a lot of time drafting and redrafting the story to create that feeling for you. He/She carefully selected words and placed them in sentences in such a way that when you and many others read them, you felt like you were there or that you could have been, or you were close with someone just like that character. That feeling did not happen by accident.

When authors evoke these feelings, they have successfully done their job. Because after the reader feels, the reader then begins to think. And when readers are thinking, they'll soon want to discuss and share those thoughts and feelings with others. Get your data users to feel something. Then, they will think about and discuss their thoughts with others and, bingo, your data becomes a best-seller!

Give it that Oprah it factor

What should blockbuster novels and your data product have in common? The IT factor!
Those award-winning novels have many moments when the the reader makes "ah ha" realizations. Creating those moments are a result of putting the reader first in the drafting phase of writing.

Authors know that when readers feel and think about their story, they will then discuss it: at their book club, online, with friends and family. They want their book to develop so much of its own chatter and attention that it ends up on Oprah's Book Club and the New York Times Best Seller list. It is the feeling the author develops inside readers that

give it that it factor that people can't stop talking about. For this reason, novelists completely obsess over the reader experience of their book and not just conveying the points of their story. Authors take into consideration how their readers feel and think while they are reading the story. That is the difference.
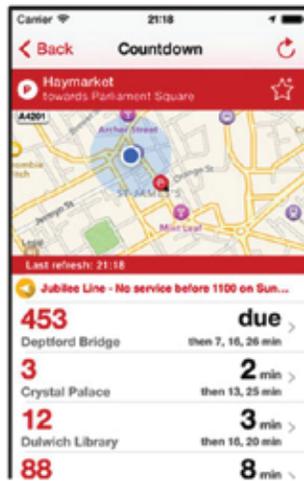
Your data must do the same. It must be presented in a way that gives your readers that feeling, to provoke a reaction that they'd want to discuss the impact it had and what they took away. Your goal is to get your audience to form their own insights and share them with others. When you can give your audience those Eureka moments, then you've achieved your data best-seller that they'll want and pay more for.

Consider how the user feels in the following cases of planning trips on public transportation. Which app would you tell your friends to use?
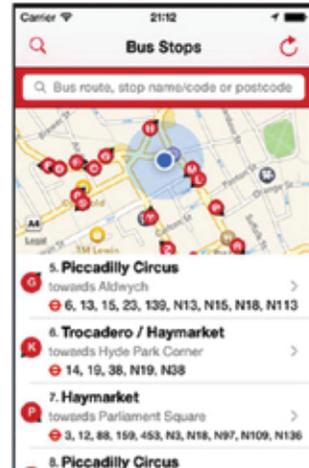

Williamsburg bus schedule (gowata.org)   *London Bus iPhone App*

Understand the big data process

The data then people approach

Perhaps the most common mistake many companies make is putting data before people. By this, we refer to the creation of long reports with countless tables and charts — reports designed to fulfill the need of simply creating one, but not necessarily to serve the needs of those who will read it.

<p style="text-align:center; font-size:2em;">**data** ⟶ **doing**</p>

Other companies, such as IBM, decided to change their traditional approach to product development and embrace design-centered thinking. This concept, in which people are the main focus, is getting noticed by companies that want to stay relevant with their customers. Here, the end user's needs are considered the starting point for the company to begin developing the product or service.

> *"IBM, like many established companies, is confronting the relentless advance of digital technology. For these companies, the question is: Can you grow in the new businesses faster than your older, lucrative businesses decline?"* [1]
>
> Steve Lohr, NY Times writer

Take design-centered thinking and our concept of "writing" data products like a novelist, and you get fresh and juicy insights like the following company.

Company spotlight: Sharing insight outside of headquarters

This global hotel group collected data about its business travelers through a hotel loyalty program. Its goal was to share what they learned from this big data initiative with hotel operators and field marketing teams to empower them to leverage these market insights.

Breaking up all this data for the respective brands and markets was a lot of work, and sending emails with PowerPoints proved to be ineffective (data then people). The company needed a scalable way for its audiences to be able to look at the data in readable, bite-sized portions to make sure they looked at it and used it.

Realizing its audience needed a more compelling way to use the data, it designed a means for hotel operators and field marketers to receive the data in a very user-friendly and understandable way. Now, the hotels are using it to cater to business travelers' personal needs, like making sure that a hypoallergenic pillow is waiting for a specific guest, thus increasing customers' loyalty and annual dollars spent.

[1] "IBM's Design-Centered Strategy to Set Free the Squares ..." 2015. 9 Dec. 2015 <http://www.nytimes.com/2015/11/15/business/ibms-design-centered-strategy-to-set-free-the-squares.html>

By carefully selecting the data to display, strategically arranging visualizations, and providing the context to address the user's challenges, you ignite discussion among your audience. Your ideal data solution allows for learning, discovering, and ultimately doing something as a result.

Internal or external audiences?

Companies largely start using data analytics to improve internal processes, aka Analytics 1.0. According to analytics academic Tom Davenport in his Harvard Business Review article, "The edge came in the form of greater operational efficiency — making better decisions on certain key points to improve performance." The audience for these data products and reports was internal. That said, data analysts operating in this era were not focused on providing an exceptional user experience with their reports; they were concerned with simply providing all the data.

Skipping over the 2.0 era, where data scientists would leave the back offices to find ways to use the data products to make a more strategic impact, we arrive at Analytics 3.0. Businesses that are in the 3.0 era of analytics are not simply cost cutting; they are innovating by providing their customers with data-driven products.

> *"Briefly, it is a new resolve to apply powerful data-gathering and analysis methods not just to a company's operations but also to its offerings — to embed data smartness into the products and services customers buy."*

> *"Google, Amazon, and others have prospered not by giving customers information but by giving them shortcuts to decisions and actions."* [2]

In Analytics 3.0, companies consider how data can serve its customers, supply chain and other external audiences. Shifting the focus from internal to external audiences inherently provokes a new way of thinking through how to create effective data products. These applications can be an extension of products or services you already offer,

[2] "Analytics 3.0 - Harvard Business Review." 2014. 5 Nov. 2015 <https://hbr.org/2013/12/analytics-30>

or completely stand on their own. In either scenario, they become part of the product or service suite, and as such, merit every bit of focus on the customer that non-data products or services do. Give them data products that make them beg for more.

Analytics 3.0

Where big data goes wrong

Some say that awareness is the first step in taking action and making change. So we think it's important to review some common mistakes companies make with big data. Check your own practice against this list.

Running the last mile

If you've ever run a marathon you know there is a lot of preparation and training that goes into crossing the finish line. Your preparation for the marathon is most evident in the last mile where you are mentally and physically exhausted. Even though it is the same amount of steps as all the previous miles, this is when your investment crosses the finish line or not.

We think there is a "last mile" effect in business intelligence, too, and this is where many companies don't finish. This last mile is putting the data in front of the everyday decision maker. Your investments and efforts to create a data warehouse is worthless without effective delivery to end users. We've heard countless clients tell us how they rely on their analysts and engineers who built the data warehouses to build the reporting interface. No offense to these talented individuals, but they are not ideally suited for designing a user interface for non-technical users. In most cases, these brilliant developers are dismissive of user experience. Many of them think that a massive data table provides a flexible solution for delivering information. "Hey, they're getting the data. Is there a problem?"

Yes, there's a problem! To have an audience follow your story, it's important to get them started on the right path. Just like a story considers the reader's experience, your data audience should have a similar experience. Carry them from the initial explanation to a new, shared understanding. Only then will they value the effort you put into assembling and presenting the information, and only then do you finish the last mile.

[3] "Vanity Metrics vs. Actionable Metrics – Guest Post by Eric Ries." 2014. 3 Dec. 2015 <http://fourhourworkweek.com/2009/05/19/vanity-metrics-vs-actionable-metrics/>

Metric pitfalls

Metrics are the values that you use to judge performance. Your metrics can create focus and alignment in your company by providing clarity to what improvement looks like. They can also lead a company astray if not carefully selected.

Vanity metrics are just what you think they are. According to angel investor and entrepreneur Tim Ferriss, these metrics are basically aggregated data points that don't provide insight into important trends that contributed to it. Ask yourself, does this metric tell you what actions to take next? If not, then don't use it.

Historical conventions translate into blindly following old practice without giving thought to the implications. Be cautious of answers like, "I don't know why, we've just always done it this way." If taxi companies had tracked customer satisfaction metrics and reacted to them, maybe they wouldn't be losing so much market share to companies like Uber and Lyft.

Simplistic metrics means taking only at face value what data give you. Just because the data is easy to track doesn't mean it will lead your business where you want to go. With overly simplistic metrics, a car dealership may attribute a spike in sales to a new training program they implemented when in fact it was due to a major employer opening a large office down the street.

Complex metrics are contrived metrics that combine data from many sources. If your goal is to shape company behavior to increase success, then it's imperative for your employees to understand how the metric was created and trust the data source. If you can't explain where it came from, think again!

Too many metrics, also known as information overload. Typically, this occurs when you are working with dozens of key metrics because they all mean something, but they may not all deserve to be called "key." This is why grouping and filtering down is important.

Starting with large scale initiatives

Big data initiatives tend to be large, expensive and long-term. You have to be nimble and start small. The CEO will change his/her mind in the coming months anyway, so get something done now that can be used. Think like Google: Produce a simple concept or idea as a beta, release it, and let users test it and give feedback. Then study the user responses and adapt the capabilities as you go. This kind of logic allows for a quick product release, less development dollars up front, and the opportunity to design the product based on consumer feedback. These initiatives yield successful results. It's better to prototype a data product that is ready to put in front of a user in six weeks instead of six months. This allows you to keep it simple and make adjustments quickly based on what's working and what's not. "Go big or go home" may be a great mantra when you are out on the ball field. But when it comes to big data, it is better to keep your data ego in check. Keep ahead of the game with smaller projects that are agile and adaptable and grow from proven and successful results.

Focusing only on internal use

As mentioned before, big data is often used to tighten up internal operations and systems a la Analytics 1.0. Turning your internal focus outward could open new areas for generating revenue you never would have imagined. Here are some ideas to begin to chart this territory with your big data, and turn your discoveries into dollars.

Mashup — combine your big data with a public data set. What would happen if you combined your data with a data set on data.gov or another public set? Perhaps you work in the public health sector as an executive of a health insurance company. You could overlay your big data with government census data to identify healthcare trends that a growing hospital needs to plan for. The hospitals could use your data product to set up their hospital for the future.

Predictive analytics — find the treasure in future trends. Can we apply an algorithm to our data to find some special meaning or make the data more helpful? Predikto is one company that has this down pat in the railroad industry. It has a great product to predict the breakdown of railroad track safety monitors. Its product analyzes a plethora of data from weather to train loads to provide maintenance crews critical yet simple health-check displays, so they can easily see when these monitors are likely to fail, and preemptively send a crew out for repairs before any damage is done.

Composite metrics — if you build it, they will come. Sometimes a simple metric isn't enough if it can't fully describe a behavior or the performance of a system. That's when you need to come up with a Franken-measure: a made-up metric that creates a comprehensive composite to capture complex concepts. Think Google's PageRank, which combines multiple complex metrics on web traffic and trends in such a way that the end result is something we can understand and use.

Not involving people in the process

More often than not, the heart of the data's message is lost among all the data tables, vanity metrics and charts. Most data producers display tons of data and pay little attention to the user and guiding them through the information. Remember, your data consumers are not the experts in the data like you are. Your users probably have responsibilities other than analyzing data. Give them the high-level path to follow. By putting yourself in your user's shoes, you can design data products that people will want to use. **Think people first!**

Use the people first process

It's logical to use company data to save money and find cost savings internally, as in the Analytics 1.0 era. Various departments, like Operations, will continue to do this. Now, we will show you how you can extend your data's value to outside audiences and start living in the Analytics 3.0 era.

So far we've talked about writing a best-seller and how it requires thinking about the audience first. We've reviewed how the evolution of analytics has shifted from data being consumed by internal analysts to external, everyday users. Now, we are going to equip you with practical knowledge to change your big data game.

Design for your audience

When you are focused on your customer's challenges, you are changing the big data game. Determine how you can get those quick wins by designing for your audience.

Start with these basic questions to help define your focus:

1. **Who am I trying to help?** Identify the exact audience for your data application and keep them top of mind from the very beginning so that you can tailor all the information to their needs.

2. **What are the challenges my audiences need to address?** Help them solve a specific problem that exists today. Avoid abstract discussions about data they need in the future or flexible offerings.

3. **What data do I have that can help them address those challenges?** Once you have the list of challenges, use it as a filter for selecting the data to use in solving them. Keep the focus on your audience and their challenges.

4. **Are they asking the right questions about the data?** Make sure they're asking the right questions that the data can answer. Listen for myths and assumptions as well as if the analysis is sound. Guide them to solving problems the data can best help with.

5. **How can I guide the users in a logical and easy-to-follow way?** Get them to structure the flow just as they might for a story or a great PowerPoint presentation.

In the following example, a travel data firm designed a new product with the same old data, but it used the people first process and designed for a specific audience to help solve its problem.

Company spotlight: Human Resources uses data, too

For HR departments it is common knowledge that retaining existing employees is less expensive than hiring and training new employees. One company was experiencing employee burnout and high turnover from road warrior salespeople who spent too much time traveling. How could big data play a role in retaining this company's employees? A travel data firm, tClara, set out to answer this question and help HR departments reduce turnover.

The tClara team created the [Trip Friction™ benchmarking application](#). This app shows HR managers which of their employees are at risk of burnout based on their individual travel data. The firm provided employee travel data such as how many weekends they traveled per year, how many overseas trips they took, and how many weeks they spent away from home.

The app is a big data solution, and tClara knew that making it people first for the everyday HR manager would be critical to its success. The HR department was able to utilize the user-friendly app to identify and intervene with at-risk employees, providing them breaks before burnout happened. Because of this digestible data, they kept staff on board for the long term and kept both productivity and profits up.

Obsess over the user experience
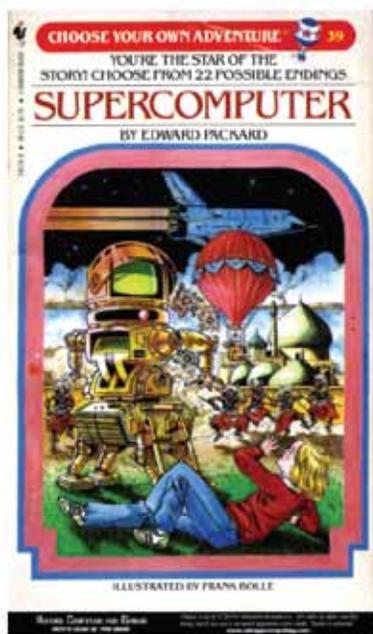
Just like the best-seller that keeps the reader's experience in mind, as a data author you should obsess over the relationship between your reader (user) and the data. When communicating through the language of data, your application should pose a problem that your audience is trying to address and deliver insight that leads the audience to take action.

Do you remember the Choose Your Own Adventure series? These children's books were very popular in the '80s and '90s, allowing the reader to become part of the story. They're a great example of how to keep the reader actively engaged with the story and the audience experience, the same thing you should strive for with your data product. In these books you were the main character, reviewing the details and choosing an action to take from two or three options at the end of each section. Each section led to more options, and then to a conclusion, ultimately chosen by you, the reader.

Whether it is a dashboard or a data-rich presentation, your data application is an opportunity to define the logical way to look at a problem or the business. These products do not simply facilitate the flow of information between people. The products also add tremendous value to the data by analyzing, summarizing, structuring, storytelling, visualizing, and contextualizing it. Design your product not to just reflect data, but to engage the user with a story, an experience they can talk about.

Company spotlight: Think lik a B2C Company

You've seen the [annual college rankings](#) that U.S. News & World Report creates. The media company established the metrics and collected data on colleges for decades. With all this incredible university information, it needed to figure out how to put its readers first. This meant reworking the data for its external audiences, universities and prospective students, so that it didn't look like a spreadsheet.

U.S. News stepped back to think like a B2C company, and by focusing on who its customers were and how they used the information, it was able to design a new course of action. The people first direction the company took was to create an interactive web application for prospective students and universities. Both audiences are looking for different data in this case. This new application (originally designed by Juice) now provides each audience a clear path to get the information they need and helps them with decision making in a much more dynamic way.

By now, the people first mantra should be the first thing that comes to mind in the big data game. Using this process, you will create solutions that successfully propel your company (and your customers) forward. The key is creating applications that your user can easily understand and navigate to address the issues that concern them most.

Make the switch to people first

Now that you are thinking people first, here are a few more habits you can add to your tool belt.

Go where they are. The famous hockey player Wayne Gretsky said it best: "A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be." When you think about the workflow and interaction of your user, it will inform the design and layout of your product. Know when your audience plans to use the data (monthly report, daily status update, etc.) and understand the device or display they plan to use, then design accordingly.

Think of it like a product. What if your customer won't buy or use your product? People first means designing the information so that the user experience is more engaging. Think of a website or an app that you find useful. It is probably well-designed, with simple graphics and flow, accurate information, and has a clean layout.

Walk a mile (the last mile) in their shoes. The people first process focuses on turning information into insights for users' everyday decision making. The last mile of this process is always the most critical. It's the complex step of pushing information from centralized, high-capacity channels to the many diverse end points where information is ultimately used. Make sure you think about how your users will consume your data. Check out more on the [last mile](#).

Have an app mind-set. Apps provide a more modern way to stay informed and discuss data with others, and are the base of a people first process. Data product users are looking for apps that answer their questions and solve problems by providing relevant information in bite-sized portions. Think apps instead of reports. Find out more here.

Know the difference between data authors and data consumers. In the people first process you have two main characters, the data authors and the data consumers. The data consumer uses data to inform his/her work versus the data author whose work is to inform people with data. Find out more on data authors and data consumers in our blog.

Let Juicebox help make your data delicious

We hope you've learned how you can begin to change your own big data game by thinking people first. We at Juice can help you tackle the people first initiative with our solution called JuiceBox. Our comprehensive approach is based on 3 key principles:

1. Sharing data must be a conversation, not just a presentation.
2. Users should have an experience that matches the apps they enjoy on their smartphones and browsers.
3. Businesses need a complete solution, not a build-it-yourself kit.

Contact us and we can help you solve your challenges and show you how to put your people first and keep them coming back for more.

Email us: info@juiceanalytics.com
Call us: (571) 482-7760
Follow us on LinkedIn and Twitter

Also check out our 30 Days to Data Storytelling guide, and get introduced to the world of Data Storytelling.