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RIDING THRU THE SMART DATA DISCOVERY AND STORYTELLING WAVE WITH INTEGRATED & INTENT-DRIVEN NARRATIVES FOR THE NEXT GEN BUSINESS INTELLIGENCE (BI) AND ANALYTICS

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Abstract

The information age has brought many advancements and improvements in life, both personal and business. Many promises and fads have come and gone. The only thing that has not changed is the promise of change. A key part of our journey from conflict to payoff - in how to ride through smart data discover while brining integrated and intent-driven narrative helping perform next generation Business analysis to tell a data story.

Keywords: Next Generation Business Intelligence, Intent-Driven Narratives, Data Storytelling Wave

1. Introduction

As exciting as digital transformation is with its limitless possibilities for revolutionizing everyday processes, the advances of technology create challenges as well. The increasing use of technology produces endless data, which has value to enterprises but is difficult to process and analyze at human speeds. To meet this challenge, data analytics tools must be implemented concurrently with content tools and process management technologies to help enterprises gain insight into what their customers want, what the market demands, and how their processes are helping — or hindering — their success.

Another challenge enterprises face is a reluctance to fully embrace digital. That is why, the latest wave of interest in data storytelling has become interesting. While it is still primarily about branding and marketing, we are seeing it being used more and more to explain data. Since business intelligence products have enabled data gathering on an industrial scale, a lot of organizations find that they are drowning in data but really missing the skills to make sense of it. That is where storytelling is at is strongest. Storytelling has the unique ability to be qualitative and quantitative at the same time. Thus it allows data be used, but only to make a point, or to add credence to a point, rather than be the point itself (GapJumpers, 2014).

2. Next Generation Business Intelligence and Analytics with Integrated and Intent Driven Narratives

Digital storytelling is becoming a stronger way of communicating especially to masses and from masses. It's an opening and democratization of information production and consumption. The good part is that you can now hear voices you couldn't reach before, the down side is that you

end up getting a lot more unfiltered information that adds little to the conversation(Santos, 2016). Enterprises often choose to harness the power of digital to solve specific problems or to automate a few selected processes. But to truly reap the benefits of technology, enterprises should embrace digital holistically, with a chief data officer at the helm focused on data, system integration, and compliance associated with digital technology.

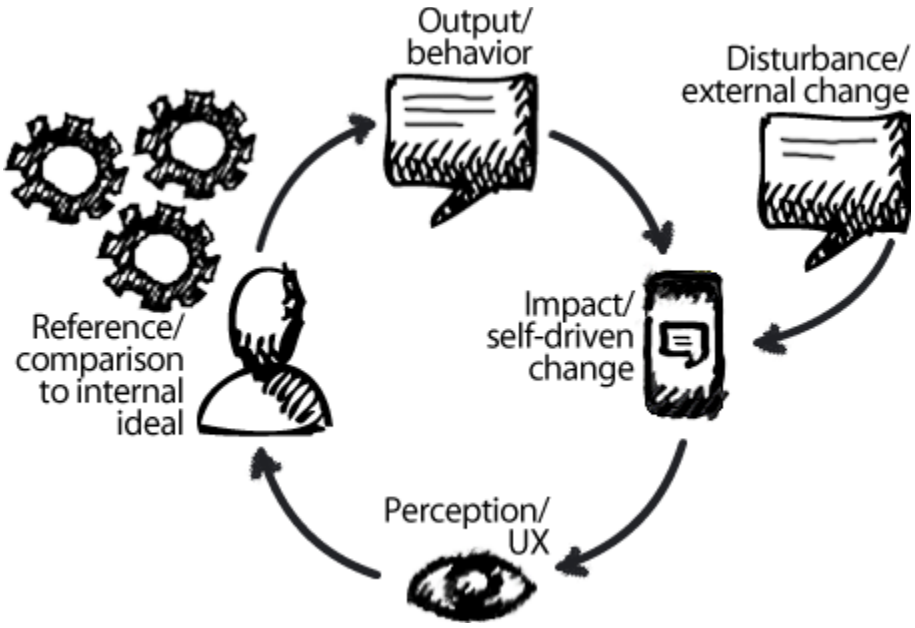

Figure 1Intention-Focused Design: Applying Perceptual Control Theory to Discover User Intent

With enterprises starting to comprehend the potential value hidden within data sets, they are looking for ways to monetize data as actual profitable assets. Smarter enterprises (irrespective of size) have obtained a sizeable handle on their data, cleverly commercializing proprietary internal data while enhancing analytics with the third-party external data. Technology vendors, professional services firms, Data brokers and specialist service providers are looking into the development of services to help support this, which

will, in turn see the rise of data marketplaces. Enterprises will also look to enhance their internal analytics through the enforcement with the third-party external data. Vendors will also aim at providing a distinction between their analytics and data platforms by differentiating between them with content that has intrinsic value-addition carried out.

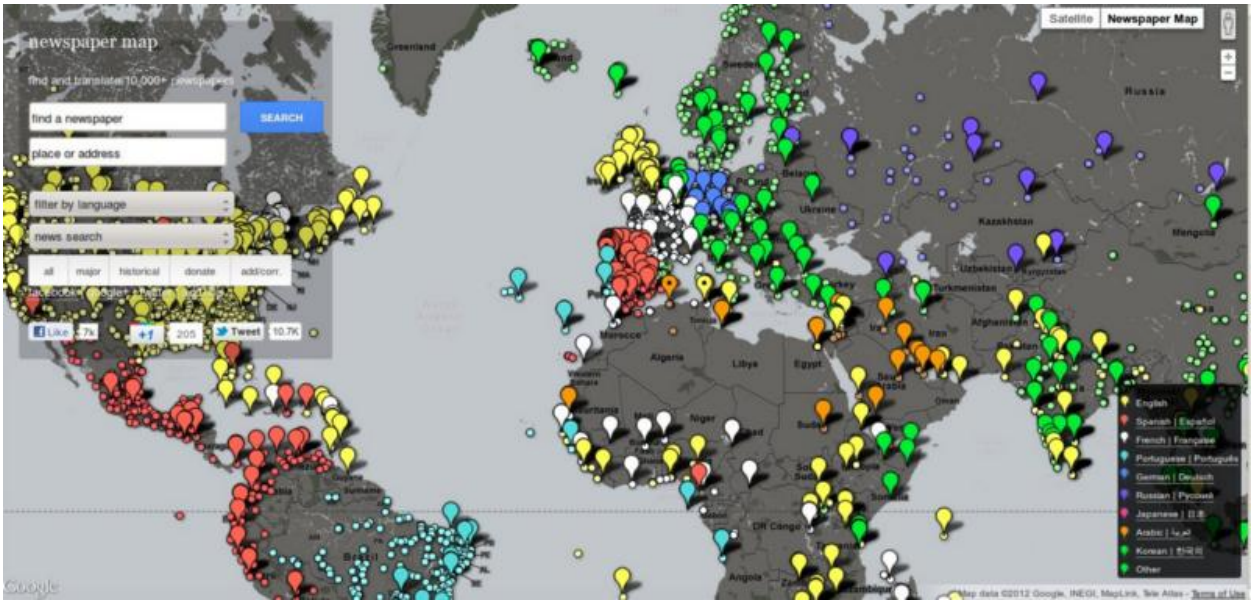

Figure 2Get more from data with Fusion Tables.

There is a good reason why media outlets like the New York Times and FiveThirtyEight excel at data storytelling: they have built teams of specialists — including data scientists, information designers, and data journalists — to analyze, visualize, and contextualize information. Short of hiring or acquiring a dozen specialists, there are several things communicators can do to get smarter. When thinking about scalability, the intent-driven approach is important because it enables the user to make a desired change across multiple sentences by simply making a change to the entity or attribute (Ghai, 2017). Smart Discovery leverages smart suggestions with auto-suggested relationships, JOINs, type casts, hierarchies, etc.

3. What's New: Dashboards for Data-Driven Storytelling and Informed Engagement

There is a seamless User Interface that makes any Business Analytics tool particularly attractive option for those who have limited advanced analytics experience. That said, keep in mind that these are not designed to replace tools like Excel, SQL, Python and R, but rather to supplement them.Next generation Business Intelligence and Analytics comprises of a versatile, user-friendly visualization[1] options with data connectors, sharing tools and modeling capabilities.

Most next generation business intelligence product user Interfaces react only when the user interacts with them for example, a volume control won't move unless you actually go and turn the knob. By intention it means that the User Interface has a way to predict what the user will do, for example, if you park in front of your house, it will be likely that you'll open the door, so an integrated and Intention-driven User Interface might automatically open the door of the car for you (and lose it afterwards) without you interacting with them.

[1] Visual Storytelling, *Visit: https://arxiv.org/abs/1604.03968*

4. Data Storytelling

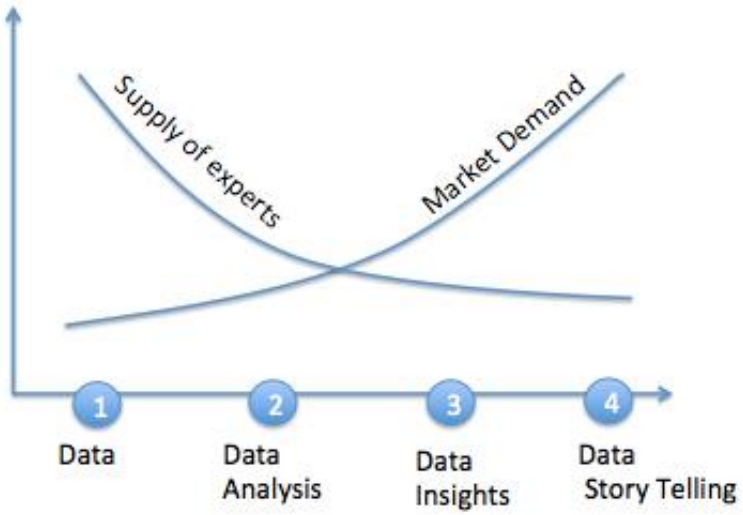

Figure 3 The elaboration in data storytelling – passionate, relatable and above all magnificently memorable.

Smart data discovery - enables business users to frame their questions and receive immediate answers, anytime, anywhere through any platform. Data stories appear to be most effective when they include interactivity at various checkpoints within the narrative allowing the user to explore the data without veering too far from the story (Infogram, 2016). Altair, Pertec, Apple II, Kaypro have all come and gone. HTML, SQL, XML, TCP/IP, GBytes, Thruput, Modules, Registries, and EMail have become frequent topics of conversation. Through it all, the end user has always wanted the same thing - quality, convenience, simplicity. In the end, business data is useless without context. It is the next generation Business Intelligence and Analytics product's job to provide that context, to tell a story with the data that provides value to the company.

4.1 How companies need to clearly define what it is they need to know

Telling a story does not automatically imply a simplistic, author-driven, linear, primarily entertaining narration. In a template approach[2], the user would be required to manually rewrite every sentence. The intent-driven approach starts with users identifying the goal for their narrative by creating an outline of analytics that are most interesting working in a structured way.

[2] I like data-driven storytelling (I like loaded words), *Visit: https://medium.com/xocas/i-like-data-driven-storytelling-i-like-loaded-words-d066d83ee909*

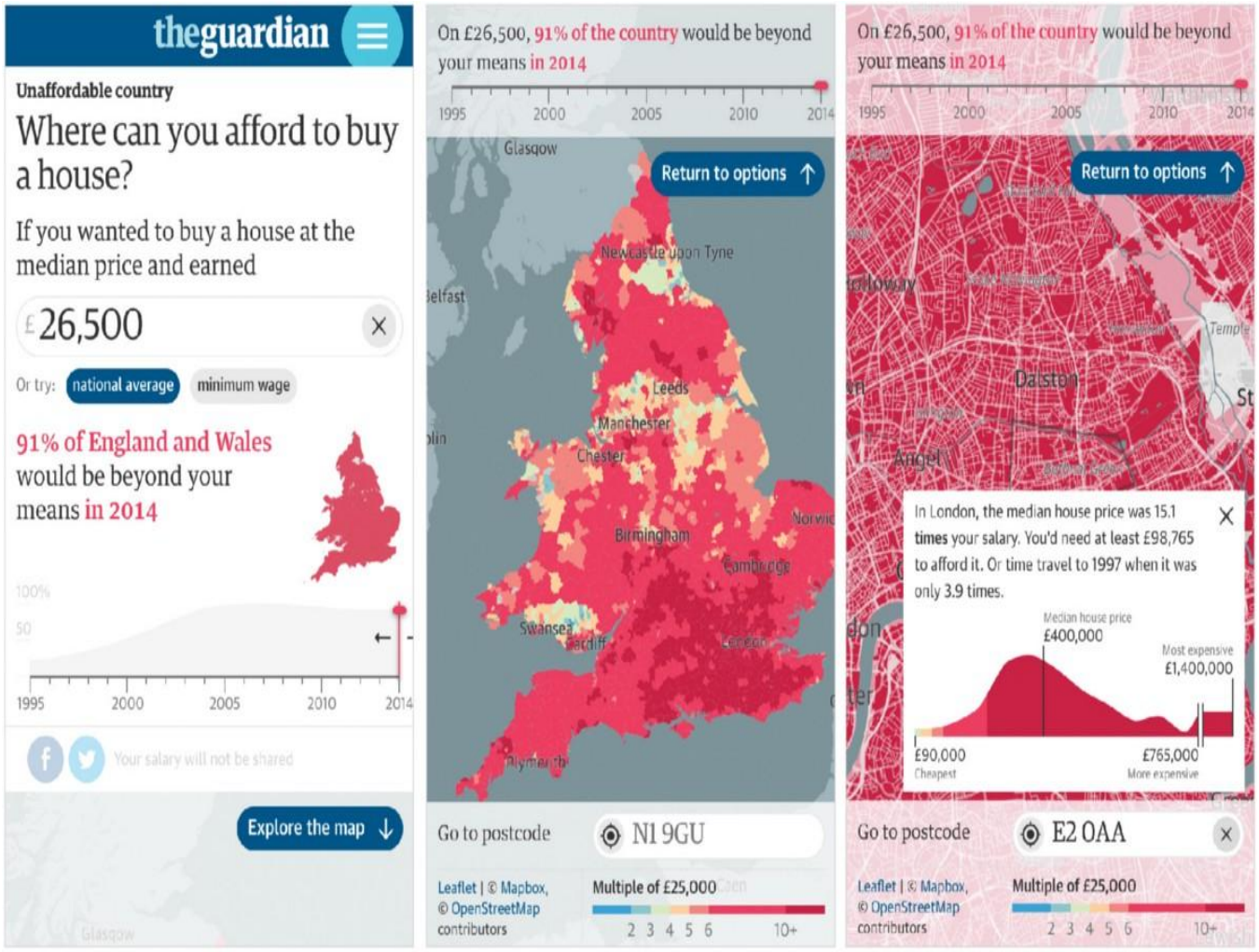

Figure 4Ben Shneiderman's Visual Information Seeking Mantra can be thought of as a narrative template.

Advances in computing power and the availability of Big Data are driving the consistent and sustained growth of Machine Learning. This makes it feasible to implement Machine Learning to a broader spectrum of applications which are data-driven beyond the mere predictive analytic algorithms that are in play in the current market scenario. Along with the stand-alone algorithmic platform service, Machine Learning is also being applied to enhance the intelligence of current analytic and data tools. This is done through smart data discovery, preparation, quality and visualization.

4.1.1 The 90/10 Rule

Working in a structured way means "Starting with strategy", which means identifying a clear business need and what data you will need to solve it. Businesses that do this, and follow it through in a methodical way will win the race to unearth the most valuable and game-changing insights. The 90% structured time should be used putting the steps outlined in the SMART Data framework into operation (Marr, 2015). Making a logical progression through an ordered set of steps with a defined beginning (a problem you need to solve), middle (a process) and an ending (answers or results).

4.1.2 BeyondCore

Rather than starting with hypotheses developed by data scientist, BeyondCore[3] is designed to allow the business to choose the measures to be analyzed, such as cost, profitability or lifetime value (ltv). The engine then identifies and explains the factors that influence the measurements(Harris, 2012).

[3] « Smart data discovery » avec Einstein, *Visit: https://medium.com/@agarwal.abhinav/smart-data-discovery-avec-einstein-29c5697d994b*

Figure 5A startup called BeyondCore claims to have solved this problem with software that analyzes every possible combination of variables and shows users exactly what they need to know.

4.2 How companies can collect relevant data and measure the metrics that will help them answer their most important business questions

In an age where social, mobile, big data, and the cloud are all converging in new and exciting ways, data storytelling has become more essential than ever. After all, we remember stories, not spreadsheets. A narrative has both meaning and value when it is memorable, personal and impactful. By telling an engaging story with the data to back it up, you'll be able to reach your audience on an emotional *and* intellectual level. The "What do you want to know about it?" question defines the goal of the story. That goal will vary depending on the data that is being used, but it could be used to explain the reason for a team's performance, track product progress over time or recommend improvements to an operational process(Woods, 2016).

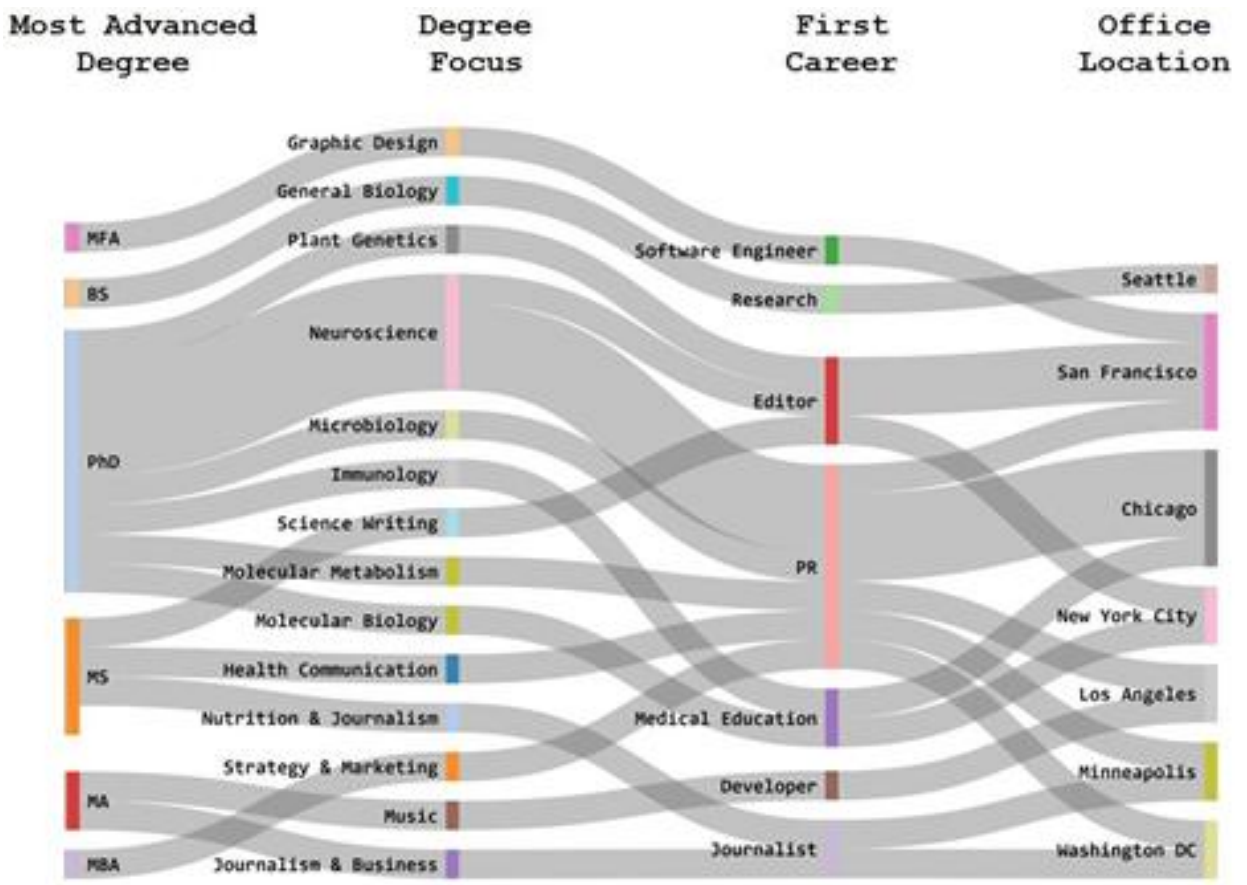

Figure 6A type of chart called a Sankey diagram, whose namesake used it to visualize the efficiency of steam engines in 1898.

Data story telling is an interesting aspect. A new wave of storytellers and artists are experimenting with humanizing the data that we're swimming in.Storytelling became widespread in the early 2000s as companies invested more in brands, culture and differentiation. An explosion of companies meant there was severe competition and stories were used as a way of explaining the origin, values and intention of brands. Stories were also mainstreamed into pitches and presentations due to their considerable powers of persuasion.

4.3 What kind of intelligent narratives lead to better outcomes in business intelligence for the analytics product?

Data storytelling is essential in the age of big data. Data Storytelling means thinking about the data you're presenting in the way a journalist would think about a story they were writing. Data storytelling is thinking about the comprehensive picture, building a narrative around it, and supporting that integrated and intent-driven narratives with data and visuals(Cairo, 2012).

Linear narrative is the special case of the general narrative class that also includes nonlinear narration. The nonlinear narration is maturely used in movies (e.g., Inception 2010). Just imagine how one can lose viewer's attention if the Inception's script is explained linearly. However, because of implementation difficulties and lack of tools, it is not as common as linear storytelling in scientific fields(Stack, 2017).

5. The results of business intelligence data analytics can be visualized and communicated to ensure key decisions-makers understand them

Business intelligence data analytics software likeWatson Analytics utilizes natural language processing and semantic recognition, which is a fancy way of saying that you can type queries in plain English (rather than code) to interact with your data. Watson looks for specific types of keywords ("predict", "compare", "trend", etc.) to interpret the intent of your query, and returns a list of recommended options sorted by relevance. This information can then be used, with varying but often increased success to target individuals, predict outcomes, and in many cases, to influence the behavior(Baker, 2009).

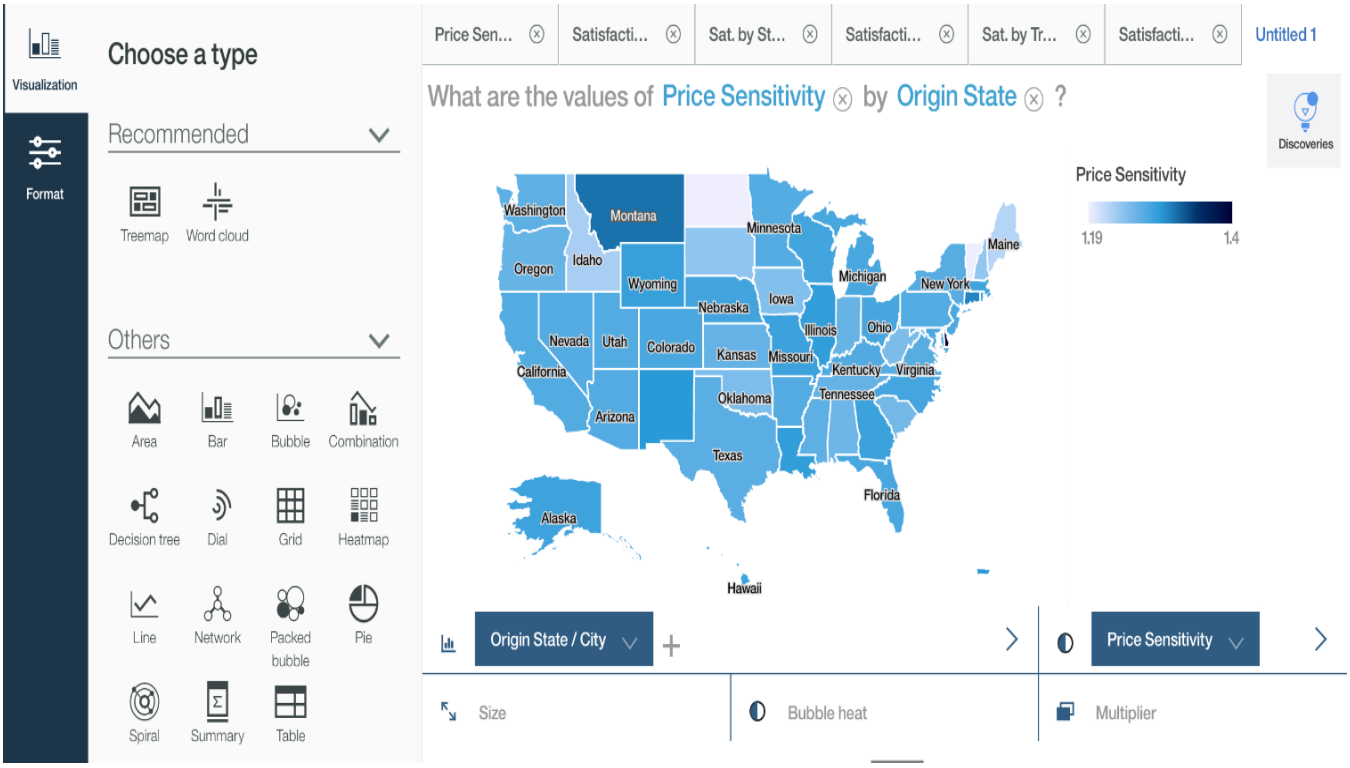

Figure 7 Hopefully Watson will be someday able to help IBM with making the process for customers to get correctly invoiced and licensing easier!

6. Conclusion

Well, business is a metric of commerce so it's disingenuous to restate the obvious as an innovated thought. Unless you control people's behavior, you're going to play technical parlor games to manipulate conduct to service market interests. You allude to digitizing attributes and quantifying desires is just old ideas in tech clothing. Stories can make intuitive sense, but are not a reliable heuristic; they oversimplify the world and encourage us to stop thinking for ourselves. Instead, you should fully embrace the uniqueness of your position, define a precise testable hypothesis, and detach your ego from the result. The consequences emerge from the origin of the integrated and intent-driven narratives riding through smart data discover and data storytelling wave.

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