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How Analytics Can Help Make the Food Supply Chain Safer and More Efficient

Learn How Analytics Can Help Pinpoint Length of Stay Opportunities

What Does the Future Hold for Local Distilleries?

How Data Is Key to Corporate Sustainability Efforts

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June 2021

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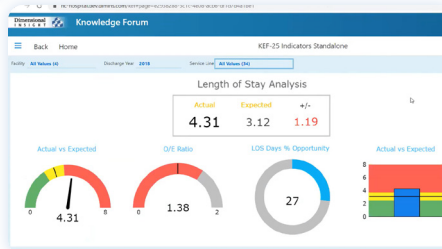
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How Analytics Can Help Make the Food Supply Chain Safer and More Efficient

by **John Sucich,**
Contributing Writer

One by-product of a disruption is that it forces organizations to look at the way they do business through a lens they might not have used before. The pandemic was one such disruption, and it has certainly had that effect on organizations within the food distribution industry.

Many organizations that have waited to invest in an analytics solution are now finding that they can't put it off any longer. What can they expect from their investment?

It's not just the pandemic

The global pandemic certainly impacted—and still affects—the food supply chain, just as it impacted that of many other industries. But it's not just because of the pandemic or drastic weather events that organizations in the food industry will benefit from a deeper look at the data. There have been changes in regulatory practices, changes in the way people eat as they pursue healthier lifestyles, and a desire in the industry to be more environmentally friendly. Analytics can help organizations improve how they address all of these factors and more.

A wide range of solutions

Two of the most important components analytics can provide for food industry organizations are resilience and transparency. The most flexible solutions can provide insights into both. One of the problems the pandemic presented to organizations was the fact that they didn't know where their problems were until they happened. In some cases, they may not have even known a part of their chain existed until that site was impacted. At the very least the pandemic forced most organizations to do a better job of mapping out their supply chain, knowing where their product is at every step of its process from source to consumer. This doesn't just benefit the company—it's the type of transparency customers have begun to look for as they buy.

Beyond the transparency it offers into the source of one's food, tracking the flow of goods can allow organizations to address issues, whether those are proactive or reactive. Sensors can provide data that includes the temperature of containers with perishable items, and if that temperature is not suitable, the company knows that and can address the situation before the food reaches its destination. The data can also be predictive, allowing a company to see the ideal route for perishable items, or how a weather event could impact the supply chain, and how to work around it.

A more sustainable model

Direct-to-consumer meal kits have provided competition to some organizations in the food industry. Having all of the ingredients necessary for a meal delivered right to one's doorstep, and often knowing where all of those ingredients come from, is something many consumers find appealing. The complaint over the years, both for the meal kit companies as well the other organizations, is that the food supply chain is not very environmentally friendly.

The direct-to-consumer companies have turned to data to try to address that issue. An organization like HelloFresh, for example, uses advanced analytics, machine learning, and predictive tools to more accurately gauge order volume, and can accurately predict what customers will be ordering with high accuracy. This predictive model, as opposed to stocking a variety of items that customers may or may not buy at a grocery store, can reduce food waste.

So where does a business start, if it hasn't already? The Food and Drug Administration (FDA) announced the New Era of Smarter Food Safety Blueprint in the summer of 2020, offering a road map to leveraging technology and other tools to create a safer and more digital, traceable food system. Organizations that had taken steps like these before the pandemic were the ones that were best prepared to weather that disruption. For other organizations, there's no time like right now to leverage data in a way that can set up success for the future. ☐

COVID-19's Impact on the Supply Chain and How Analytics Can Help

Read white paper

Learn How Analytics Can Help Pinpoint Length of Stay Opportunities

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Dashboards are great tools for visualizing data. Large amounts of data that might be tedious to analyze can be quickly summarized and displayed as charts or a single indicator. However, tables are better for the comparison of individual items. In tables, indicators can assist visualization and improve understanding of the data in the table.

So, how can you use these indicators? And more specifically, how can they help pinpoint Length of Stay (LOS) opportunities for hospitals and health systems? Let's look at the two examples mentioned above: standalone indicators and indicators that are part of a table.

There are many types of indicators in DivePort, Dimensional Insight's dashboard software. They are all simple to use and easy to configure.

You can see a list of all these indicators in Dimensional Insight's online help at www.dimins.com/help/indicator-types/.

It's great to have a lot of options from which to choose. However, having many options to choose from presents the challenge of deciding on the most appropriate indicator to communicate the data you display. To do that, here are some tips.

- Use indicators to enhance context via visualization, like using the color red to indicate an undesirable number.

- Choose indicators that are intuitive and obvious. Users should be able to interpret the data quickly rather than spending a lot of time attempting to understand the data.

- Indicators should drive the users towards the meaningful insight of the data to make actionable decisions.

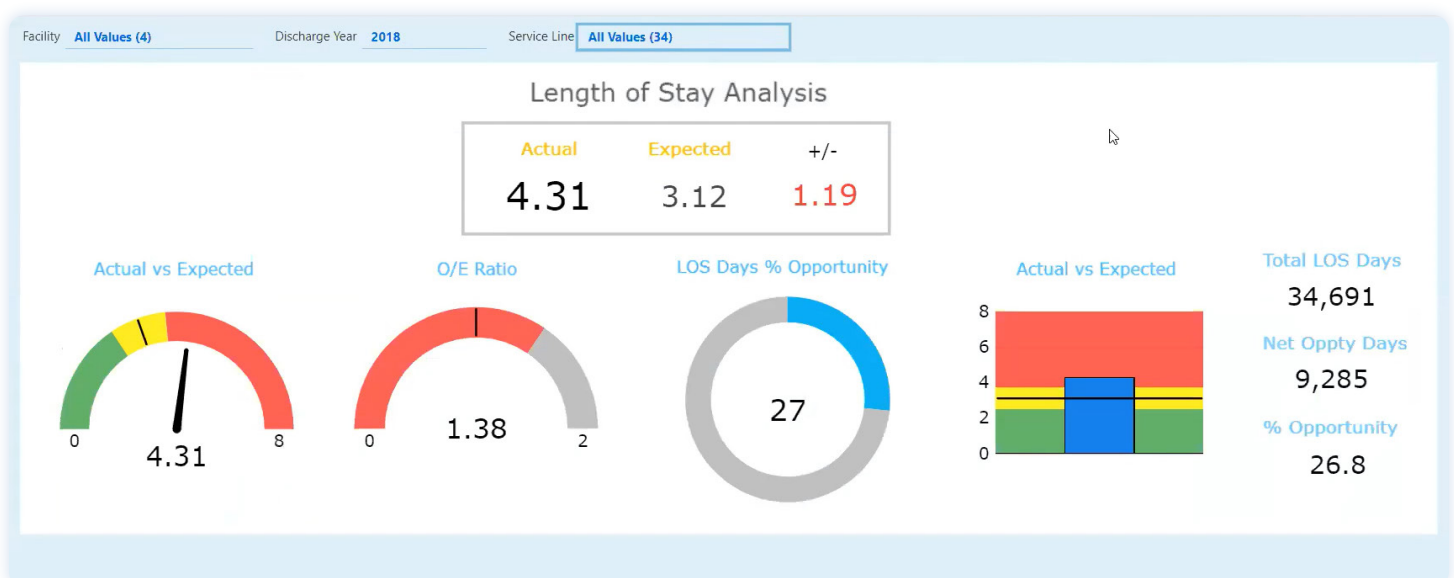- Leverage QuickViews that act upon your indicators for diving capability and more interactivity.

Figure 1.

The KPI or metric used for this article is Length of Stay (LOS), an essential metric in the healthcare world. Figure 1 shows a collection of different types of standalone indicators for LOS. At the top of the image, there are text indicators that provide numbers. The bottom of the image shows visual indicators which offer additional aspects to the KPI, like color, shape, and position that add meaning.

These indicators highlight different aspects of the KPI LOS. For instance, the first visual indicator compares the Actual versus the Expected value of LOS. The types of visual indicators from left to right are: Fuel Gauge, Fill Gauge, Circular Gauge, and Vertical Bullet. The visual indicator on the leftmost and the rightmost displays the value of Length of Stay Actual versus Expected. However, they use different approaches to presenting that data.

You'll see a black line in the yellow in the fuel gauge, which is the expected target value for the Length of Stay. But because our actual Length of Stay is higher than expected, the pointer shows that the value is in the red color zone.

The second gauge is a Fill Gauge and displays the ratio of actual versus expected Length of Stay. The target is '1.0'. But because the actual value is higher than the target, the fill is colored red. If the actual Length of Stay were less than or equal to the target, the fill would be colored green.

The circular gauge shows that there is a 27% opportunity for Improvement in terms of reducing the length of stay.

All the indicators are easy to configure. Users have a lot of control over their appearance and can choose different colors for the targets. Users can also edit the target value and use markers or Measure Factory standard measures to define the values in these indicators.

So this is the first approach, where you can use standalone indicators.

Now, let us look at a second indicator type, which adds meaning to numbers in a table.

		VOLUME			UTILIZATION				OPPORTUNITY			
Service Line	Discharges	LOS Days	% LOS Days		Acute ALOS	Exp ALOS	O/E Ratio	O/E Net	Net Oppty	LOS % Oppty	Oppty % Total	Opportunity
Totals	8,048	34,691			4.3	3.4	1.38		9,285	27	100.0	
GENERAL SURGERY	588	4,106	11.8		7.0	4.1	1.71		1,311	32	14.1	
PULMONARY	818	3,878	11.2		4.7	3.3	1.42		1,151	30	12.4	
GASTROENTEROLOGY	901	3,507	10.1		3.9	3.1	1.28		906	26	9.8	
CARDIOLOGY	1,027	3,472	10.0		3.4	2.6	1.30		933	27	10.0	
GENERAL MEDICINE	508	2,611	7.5		5.1	3.7	1.39		722	28	7.8	
OTHER ORTHOPAEDICS	396	2,217	6.4		5.6	3.8	1.48		719	32	7.7	
OBSTETRICS	681	1,677	4.8		2.5	2.5	1.01		128	8	1.4	
NEUROLOGY	435	1,659	4.8		3.8	2.9	1.32		457	28	4.9	
NEPHROLOGY	383	1,587	4.6		4.1	3.4	1.23		386	24	4.2	
ONCOLOGY/HEMATOLOGY	259	1,217	3.5		4.7	3.4	1.38		343	28	3.7	
MAJOR JOINT PROCEDURE	391	1,139	3.3		2.9	2.4	1.21		194	17	2.1	
VASCULAR SURGERY	139	829	2.4		6.0	3.2	1.84		230	28	2.5	
NEUROSURGERY	104	800	2.3		7.7	4.1	1.89		302	38	3.2	
ENDOCRINOLOGY	215	789	2.3		3.7	2.8	1.30		224	28	2.4	
DERMATOLOGY	208	761	2.2		3.7	3.3	1.11		164	22	1.8	
OPEN HEART	82	728	2.1		8.9	7.1	1.24		140	19	1.5	
UROLOGY	104	526	1.5		5.1	3.2	1.59		163	31	1.8	
SPINE	136	428	1.2		3.1	2.3	1.40		108	25	1.2	
THORACIC SURGERY	53	380	1.1		7.2	4.7	1.53		112	29	1.2	
SURGICAL TRACHEOSTOM	10	337	1.0		33.7	19.6	1.72		135	40	1.4	

Figure 2.

In Figure 2, we have implemented the second approach. We have incorporated indicators in our tabular presentation. We have used DivePort's measures portlet, but you can also use the matrix portlet to define these indicators. This table is divided into three sections to compare Volumes, Utilization, and Opportunity. You can select different values from the QuickViews: "Facility," "Discharge year," or "Service Line," and you'll see that all the numbers in the table change. For example, if we choose the Service Line "Endocrinology," the table will display Endocrinology Volume and Endocrinology Opportunity. The best part about this page is that you can start at a high level and dive deeper for more information. You can see data for a KPI such as Length of Stay at an organization level. And then, you can dive deeper to find out if there's an opportunity in any service line or any providers where you can reduce the Length of Stay.

General Surgery	103	342	1.0	3.32	2.87	1.16 →	66	19	.7

Figure 3

Attending Provider	Discharges	LOS Days	% LOS Days	Acute ALOS	Exp ALOS	O/E Ratio	O/E Net	Net Oppty	LOS % Oppty	Oppty % Total	Opportunity
Totals	3,455	16,682		4.83	3.20	1.49		5,131	31	100.0	
Coffey, S (PHY_002913)	278	1,399	8.4	5.03	3.22	1.56		490	35	9.5	
Kirk, D (PHY_001302)	253	1,248	7.5	4.93	3.32	1.49		354	28	6.9	
Meyer, G (PHY_003569)	273	1,206	7.2	4.42	3.14	1.41		325	27	6.3	
Cunningham, H (PHY_00377	267	1,179	7.1	4.42	3.24	1.36		329	28	6.4	
Cohen, J (PHY_003243)	133	750	4.5	5.64	3.37	1.67		275	37	5.4	
Barnes, A (PHY_001862)	138	638	3.8	4.62	3.19	1.45		178	28	3.5	
Bright, M (PHY_004421)	105	606	3.6	5.77	3.45	1.67		241	40	4.7	
Quinn, U (PHY_003492)	102	481	2.9	4.72	3.44	1.37		106	22	2.1	
Mcgee, J (PHY_002924)	72	452	2.7	6.28	3.20	1.96		184	41	3.6	
Skinner, T (PHY_003065)	108	449	2.7	4.16	3.17	1.31		109	24	2.1	
David, M (PHY_002977)	77	400	2.4	5.19	3.30	1.57		133	33	2.6	
Patterson, G (PHY_001940)	68	399	2.4	5.87	3.44	1.70		140	35	2.7	
Dotson, Z (PHY_002872)	76	371	2.2	4.88	3.02	1.61		136	37	2.6	
Sargent, Y (PHY_003840)	80	351	2.1	4.39	3.16	1.39		98	28	1.9	
Cox, T (PHY_003807)	79	349	2.1	4.42	3.23	1.37		82	23	1.6	
Stevenson, U (PHY_003606)	67	335	2.0	5.00	3.19	1.57		102	31	2.0	
Morrison, S (PHY_002491)	46	308	1.8	6.70	3.51	1.91		132	43	2.6	
Spence, B (PHY_003793)	70	304	1.8	4.34	3.29	1.32		68	22	1.3	
Le, O (PHY_003619)	64	299	1.8	4.67	3.23	1.44		85	28	1.6	

Figure 4

The indicators in this table are easy and straightforward to configure, and there are many alternative indicator styles that you can incorporate.

Figure 3 utilizes all of these indicators. There are standalone indicators, text indicators, and visual indicators. There is also a table at the bottom of the image, which has indicators right in the table. So if we take a look at the example, we have selected all Service Lines. Looking at the "Attending Provider Service," this view shows that Internal Medicine has the highest opportunity to improve by reducing the length of stay. The opportunity percent total is 55.3, and the most significant opportunity. The green circle in the racetrack indicator under "Opportunity" emphasizes that this is the most significant opportunity. These indicators provide information about the actual and expected LOS value. If the actual is higher than expected, the slope indicator points upwards and is colored red to indicate an undesirable value.

Figure 4 shows that we can dive further down on internal medicine by Attending Provider to determine if any specific provider shows a need for improvement. Here, the first provider shown has an 8.4% of the length of stay days. And there's 9.5% of opportunity.
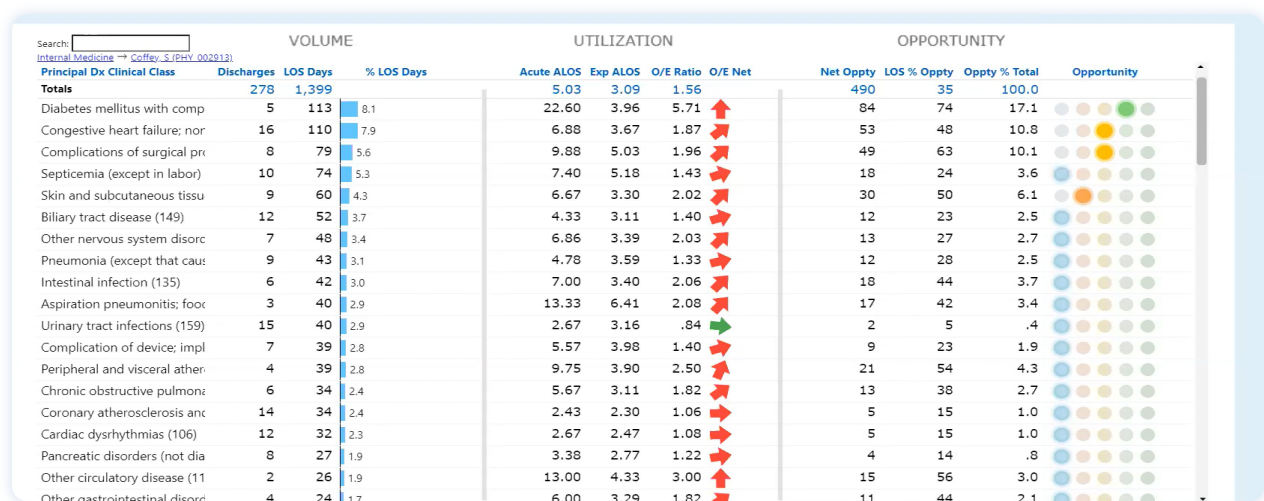
Figure 5

Figure 5 shows that if we want to dive further down, we can check the type of diagnoses that make up these values and see if there's any room for improvement. We can dive on the provider's name by Principal Dx Clinical Class to figure out the diagnoses with the greatest need for improvement. So from this dive, we can see the two top diagnoses, Diabetes and Congestive Heart Failure. They both are chronic conditions.
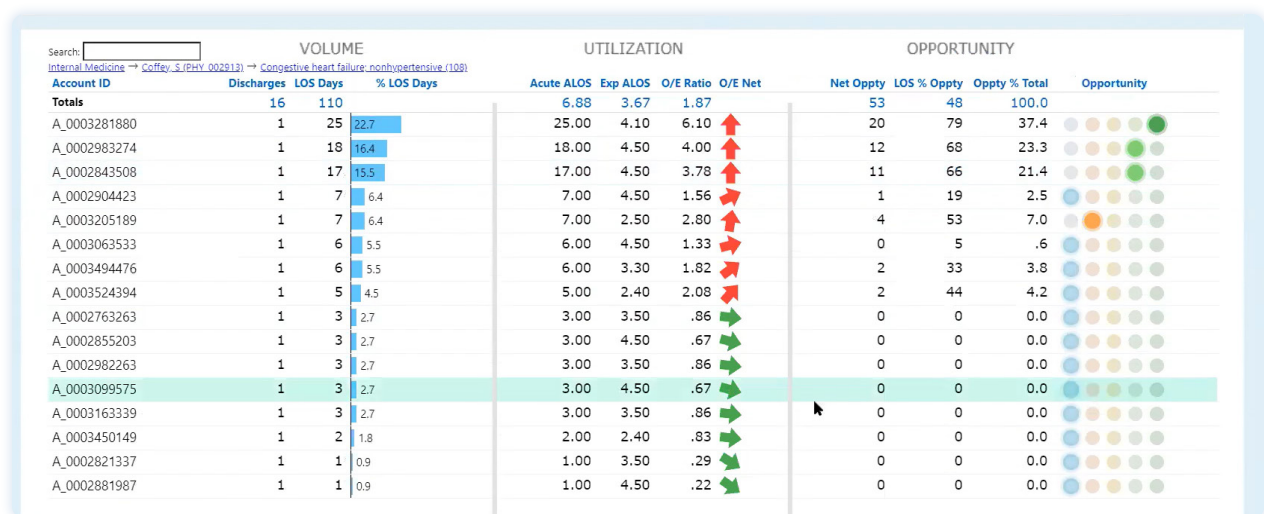

Figure 6

Figure 6 shows that we can dive further down by an account ID on congestive heart failure to find out if there are any specific account IDs with a high level of opportunity for improvement. Here, you can see the top three account IDs out of 16, which have the highest opportunity for improvement.

This is how you can start with the high-level Length of Stay information and then dive deeper into the numbers to find if there's an opportunity for improvement or not.

To summarize how we achieved this analysis, we used standalone indicators and indicators that are part of a table. Like we saw in the dashboard example, while creating a dashboard page, you have to keep the user's perspective in mind to create intuitive and actionable dashboard pages with effectively communicated information. Do not add so much information that you confuse the user. Also, make the dashboard pages interactive so that users can dive into the numbers. Users can slice and dice and get the information that they seek. Proactively diving into the data for the information they need can drive a user towards a meaningful insight into the data. And finally, indicators are an excellent opportunity to improve visual appeal for dashboard pages. □

For more information, you can visit Dimensional Insight's online help

Online Help

For more tips & tricks, you can visit the Knowledge Forum

Knowledge Forum

What Does the Future Hold for Local Distilleries?

by **Meredith Galante,**
Contributing Writer

In March 2020, local distillery owners transformed into heroes when they used their facilities to create alcohol-based hand sanitizers to help fight the Coronavirus pandemic.

But now, distilleries' futures remain uncertain because an estimated 41%, or $700 million, of craft distillers' sales have dried up, according to a study released by Distilled Spirits Council Of The United States (DISCUS). The survey includes nearly 300 distilleries across all 50 states and the District of Columbia.

Without intervention, this could mean 2021 will see distilleries closing, consolidation of distilleries, and fewer regional brands offered in bars and stores.

Why are distilleries struggling?

The distilleries' problems started when states went into lockdown because of the pandemic, forcing distillery tasting rooms to close

The tasting room closures resulted in a loss of $700 million in sales. 40% of distillers said more than 50 percent of their business came from tasting room sales.

As a result, 4,600 people, or 31% of distillery employees, have been furloughed.

"The analysis underscores the importance of craft distilleries as economic drivers in their communities that create jobs and support local farmers and tradesmen. It also makes clear the extreme challenges these small businesses are facing and the need for Congress to immediately act to help these cherished distilleries recover," said Chris Swonger, president and CEO of DISCUS.

Even as states open back up, the DISCUS study reports more than 40% of distillers say their wholesale business is down 25% or more, and 11% said they had lost all of their wholesale business. 40% percent also reported their on-site sales were down 25%.

"Craft distillers are a special community of men and women who entered this industry with a passion for spirits and a dream to build a craft distillery in their local town," said Erik Owens, president of the American Distilling Institute, which represents more than 600 independently owned craft distillers. "For many, these dreams have been shattered in the blink of an eye. These small businesses are going to need the continued support from federal and state legislators to weather this unpredictable storm."

What can local distilleries do to survive a post-pandemic world?

Distillery owners may have some light at the end of the tunnel with COVID-19 vaccine rollouts happening across the country, but the truth is ordinary remains a far way off.

To survive the coming months, distillery owners should apply for pandemic relief through the Small Business Administration. The Administration offers a few options, such as the Paycheck Protection Program, SBA Bridge Loan, or SBA Debt Relief programs. These initiatives may help tide business owners over until sales naturally inflate.

Next, owners should pair up with other local businesses in the "shop local" push that has been popular during the pandemic. Many customers are trying to spend their money at small, local businesses, so make sure your name is out

there, and customers know about your brand. For example, if you have a relationship with a local liquor store, ask them to put a sign up near the local beer section.

Distilleries can also offer virtual tastings as a way to increase sales, a fun way to engage customers regardless of where the customers currently are. Offering virtual tastings can also be a way to re-engage furloughed staff. You'll need employees to pack up and ship the tasting bottles, and then someone to run the Zoom call with customers and provide exciting tidbits. ☐

For more information, be sure to check out Dimensional Insight's white paper

5 Ways the Beverage Industry Has Been Impacted By COVID-19

How Data Is Key to Corporate Sustainability Efforts

by **Beatriz Neves,**
Contributing Writer

In today's hypercompetitive world, organizations need to take full advantage of their most valuable asset, their data. The amount of data and data sources is increasing. Companies receive information from the market and the political environment—and also now, from much more individual sources such as installed sensors in their warehouses or along the distribution chain—see post "3 High-Tech Trends That Are Changing Manufacturing."

This provides an unparalleled opportunity to have timely insights on how the business is performing, if it is fit for the future, or where it should invest. But in order to seize the full potential of the large amount of data generated, organizations need to be able to identify relevant information, organize it, and make it accessible and understandable for future use.

The value of data engineering in sustainability

Data engineering has a critical role in securing long-term value from the data collected. It allows organizations to integrate different data sources in a timely manner, making relevant information clear and understandable to be used by the decision-makers. It also guarantees that any possible risks are identified and mitigated in time.

During this time of unprecedented growth, climate change and thus sustainability are the most urgent topics institutions must face.

When a business has a broad knowledge about its strengths and weaknesses it can adopt long-term sustainable strategies

Sustainability is commonly defined as "meeting our present needs without compromising the ability of future generations to meet their own," considering the economic, environmental, and social aspects.

It's easy to understand how a company strives to be economically sustainable. However, in order to succeed, companies need to commit to both environmental and social sustainability. To do this they need to use the tools and technology at their disposal and consider the entire life cycle of their products and services to ensure their operations and activities have a positive impact on society.

Goals for a sustainable future

In 2015, the UN agreed upon 17 Sustainable Development Goals (SDGs) which organizations and countries can use as guidelines towards a better and more sustainable future.

But how can organizations use data to align with these goals?

By incorporating best practices in its long-term strategies: Using data to find what social and environmental externalities are being produced by its activities and acting on it. Better informed decisions increase efficiency, reduce waste, and save money.

By communicating its social and environmental performance in a transparent way: Increasing its internal and external reputation. Better reputation leads to more and more loyal customers and satisfied, loyal employees.

By changing consumer behavior: Organizations have been using data to influence consumer's choices for many years. The same techniques can be used to drive sustainable behavior.

By becoming more sustainable, efficient, and productive.

How Dimensional Insight can help with sustainability efforts

Dimensional Insight helps its partners and customers to make more informed decisions and work towards a better world. We can help you answer questions such as:

- How can you optimize your distribution network and save fuel and GHG?

- What is your environmental footprint and how can you change it?

- What are your suppliers' environmental impacts and how that affects your scope 3 emissions?

- How you can create a single platform to have an overview of yours and your partners' impacts, with KPIs and metrics defined by you.

- How to better identify return on investment of new initiatives. ☐

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Denver, CO
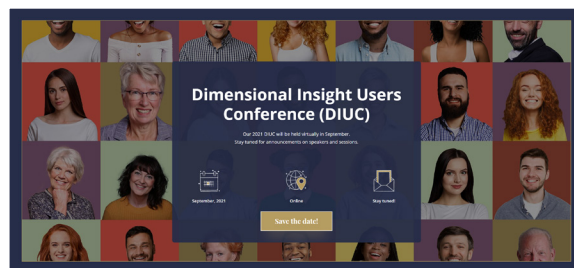

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[**Events**]

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Dimensional Insight achieved top placement for the 12th straight year in the Wisdom of Crowds® Business Intelligence Market Study. The study surveys business intelligence (BI) end users about their experience with BI solutions and trends in the industry. In this year's report, Dimensional Insight generally improved its performance over 2020, and it maintained its perfect "recommend" score.
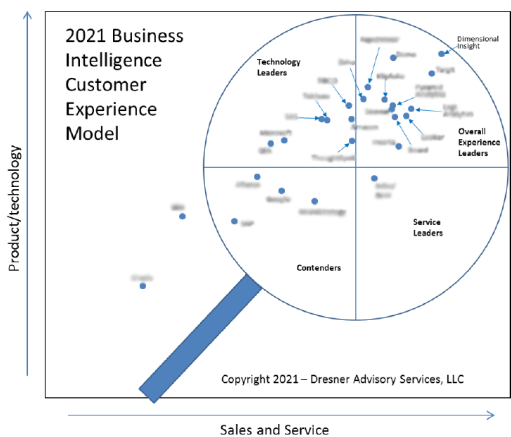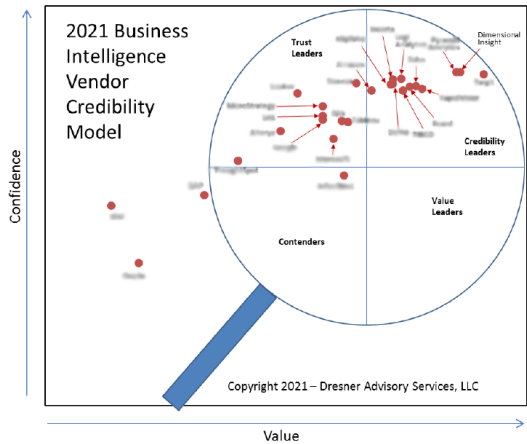

Figure 103 – Customer experience model

Figure 104 – Vendor credibility model

To download a copy of this year's Wisdom of Crowds Business Intelligence Market Study, please visit:

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