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BEST PRACTICES

AWARDS

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2020 BEST PRACTICES
AWARD

Yewno | Edge

**2020 GLOBAL PREDICTIVE
ANALYTICS FOR FINANCIAL SERVICES
TECHNOLOGY INNOVATION AWARD**

Contents

Background and Company Performance	3
<i>Industry Challenges</i>	3
<i>Technology Attributes and Future Business Value of Yewno</i>	3
<i>Conclusion</i>	6
Significance of Technology Innovation.....	7
Understanding Technology Innovation.....	7
<i>Key Benchmarking Criteria</i>	8
Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices.....	9
The Intersection between 360-Degree Research and Best Practices Awards.....	10
<i>Research Methodology</i>	10
About Frost & Sullivan	10

Background and Company Performance

Industry Challenges

The vast and overwhelming amount of information available today through digital news feeds presents a monumental task for those wishing to derive meaning from it. With an entropic and exponentially increasing volume of information exacerbated by digital channels, it is humanly impossible to ingest it all.

In the banking and financial services sector, large banks, asset managers, and hedge funds employ teams of experienced analysts to sift through an endless list of documents such as news headlines, court filings, patents, and government documents. They spend countless hours sorting through unstructured data to build portfolios and understand the impacts that trends and concepts have on various equities.

To manage these challenges, some companies use terminals— and systems that provide access to market data and streamline stock analyses so that users can make informed decisions on traded equities. Terminals run the gamut from high-end and costly solutions to free-to-use platforms with mediocre tools. Some of the more advanced solutions incorporate alternative data feeds—a quickly growing trend—into their analyses as well.

The central challenge for solutions providers, then, is to leverage advanced technology to create holistic, user-centric, and affordable solutions. Providers also need to be transparent in the way they transact and arrive at conclusions through information.

Technology Attributes and Future Business Value of Yewno

Founded in 2015 in Silicon Valley, Yewno initiated as a research project that dates back to 2009 when the company's Chief Executive Officer, Ruggero Gramatica, was pursuing a Doctor of Philosophy degree in applied mathematics at King's College in London. Gramatica's research sought to explain economic and financial cycles through unstructured knowledge from physics. While applying the research to search for cures for rare diseases at a Swiss biotechnology company, Gramatica realized he could use his technology for interdisciplinary purposes. He relocated to Stanford University, where he built a research tool based on these concepts. This inference engine ultimately became the foundation for Yewno, an innovative new company that leverages artificial intelligence (AI) to extract knowledge and insights from vast amounts of data. Building upon its core technology to design solutions applicable to various industries, Yewno has grown into a global company with offices in Palo Alto, California (headquarters), New York City, London, England and across Europe.

Structuring the Unstructured

At the heart of Yewno lies the company's dually patented knowledge graph, which ingests massive amounts of data and creates insights based on it. The knowledge graph detects correlations between ideas, concepts, and themes, and then graphs them into dynamic representations. In the banking and financial services space, this AI-based framework drives the capabilities of three products: Data Packages, Index Strategies, and Yewno|Edge.

- Data packages assist large banks, hedge funds, asset managers, index providers, sell-side institutions, research firms, pension funds, and exchange-traded fund (ETF) issuers to perform three types of research: Alpha generation, research, and risk analysis. Users integrate alternative data with signals to generate ideas and find hidden investment opportunities (i.e., generating alpha), gain insights based on court filings, patents, government documents, and other sources, and correlate risk and exposure to trending concepts such as blockchain or AI.
- Yewno also offers index strategies that function with more scalability than the data packages. Yewno's Strategy Builder works similarly to a stock screener but on a conceptual level rather than utilizing conventional criteria. It drills down to create more specific sector and geographic coverage. Furthermore, Yewno explores companies' patent filings to determine exposure to new technologies and innovations. Index providers can leverage Yewno to build indices based on concepts such as clean energy, cloud computing, or AI—a task that could otherwise take an analyst team months to achieve. There are currently nine active indexes based on this technology developed in partnership with STOXX, Nasdaq and SolActive.
- Launched in September 2019, Yewno's newest product, Yewno|Edge, provides multiple data sources such as intelligent news flow, fundamental and alternative data, real-time pricing, ETF holdings, patents, alpha signals, and concept exposures. For instance, during the coronavirus disease outbreak, Yewno identified several companies developing vaccines, and subsequently saw increases in their share prices as the coronavirus spread. Yewno also assigns mathematical values to the connections it identifies, which companies use to rank stocks.

In addition to the company's off-the-shelf products and services, Yewno also provides bespoke solutions for institutional clients.

Maintaining the Integrity of a High-quality Value Proposition

Yewno draws on experience and expertise to ensure the quality of its solutions. With specialization in computational linguistics, machine learning, graph theory, and the industry know-how that comes from working with financial services leaders including STOXX, Nasdaq, and Moodys Analytics, Yewno is well-positioned to build and deliver high-quality products. The Knowledge Graph incorporates hundreds of millions of content assets about various pre-existing and trending topics related to finance, then scrutinizes them with an unsupervised machine learning algorithm and advanced semantic analysis. All data sources go through a 12-phase curation process on the front end and either real-time, daily, or quarterly updates (depending on the type of source) on the backend to provide an evolving data framework. Also, the Knowledge Graph provides the transparency that banking and financial services companies require when vetting information sources. By visualizing its methodology, they understand trends and how they impact stocks without having to trust the advice of others.

Democratizing Financial Services

Yewno's off-the-shelf products offer banking and financial services professionals an invaluable service, allowing them to remain competitive in a quickly-evolving industry. The value proposition behind this technology enables users to accomplish nearly unfathomable research tasks, even for experienced teams of analysts, with cutting-edge resources. Analysts cannot compete with machine learning-powered software that reads, comprehends, and analyzes millions of documents in a completely unbiased and neutral way. By accomplishing this feat in a much shorter duration of time, Yewno's technology delivers tremendous value to anyone who uses it.

As an established market pioneer, Yewno has set an objective to build its brand and democratize the space by offering its solutions to not only institutions but a spectrum of individual users at accessible price points. By providing resources that typically cost thousands of dollars each month, Yewno makes detailed analysis available for everyday investors.

With offices throughout the United States and Europe and financial backing from Pacific Capital Group and AI Capital Fund, and clients in nine countries, Yewno maintains a prime position for sustained growth. Since its incipience, Yewno has created nine indexes and four investment products that have several hundred million of assets tied to them; including STOXX AI Global Artificial Intelligence Index (STXAAIP), which outperformed similar indexes that also aimed to track global exposure to AI.¹ The company gains visibility through critical partnerships with Stox Limited, Nasdaq, Moody's Analytics and Yahoo Finance, and by attending conferences that provide opportunities and key referrals.

¹ <https://www.bloomberg.com/news/articles/2018-01-22/man-versus-machine-index-fight-hinges-on-people-trusting-robots>

Conclusion

For many analysts in the banking and financial services sector, the most Herculean task is making sense of veritable oceans of unstructured data in an attempt to build portfolios, glean knowledge, and make solid financial decisions on traded equities. Even with the aid of expensive, cutting-edge resources, it is impossible to analyze the sheer entirety of information, which grows exponentially.

Yewno leverages artificial intelligence and machine learning built into its innovative software platform to extract knowledge and insights from vast amounts of unstructured data, providing instantly—and at a fraction of the cost—what once took months for entire teams of analysts to deliver. Its dually patented knowledge graph ingests massive amounts of information and presents data on hidden investment opportunities as well as insights on risk and exposure. Yewno's high degree of specialization and conservative price point prove it to be an invaluable service for banking and financial services professionals, as well as individual investors.

Frost & Sullivan believes this groundbreaking technology is a massive turning point for investors and financiers of all stripes and presents Yewno with Frost & Sullivan 2020's Global Technology Innovation Award for predictive analytics in the financial services industry.

Significance of Technology Innovation

Ultimately, growth in any organization depends on finding new ways to excite the market and maintaining a long-term commitment to innovation. At its core, technology innovation, or any other type of innovation, can only be sustained with leadership in 3 key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Technology Innovation

Technology innovation begins with a spark of creativity that is systematically pursued, developed, and commercialized. That spark can result from a successful partnership, a productive in-house innovation group, or a bright-minded individual. Regardless of the source, the success of any new technology is ultimately determined by its innovativeness and its impact on the business as a whole.

Key Benchmarking Criteria

For the Technology Innovation Award, Frost & Sullivan analysts independently evaluated 2 key factors—Technology Attributes and Future Business Value—according to the criteria identified below.

Technology Attributes

Criterion 1: Industry Impact

Requirement: Technology enables the pursuit of groundbreaking ideas, contributing to the betterment of the entire industry.

Criterion 2: Product Impact

Requirement: Specific technology helps enhance features and functionalities of the entire product line for the company.

Criterion 3: Scalability

Requirement: Technology is scalable, enabling new generations of products over time, with increasing levels of quality and functionality.

Criterion 4: Visionary Innovation

Requirement: Specific new technology represents true innovation based on a deep understanding of future needs and applications.

Criterion 5: Application Diversity

Requirement: New technology serves multiple products, multiple applications, and multiple user environments.

Future Business Value

Criterion 1: Financial Performance

Requirement: Potential is high for strong financial performance in terms of revenues, operating margins, and other relevant financial metrics.

Criterion 2: Customer Acquisition

Requirement: Specific technology enables acquisition of new customers, even as it enhances value to current customers.

Criterion 3: Technology Licensing

Requirement: New technology displays great potential to be licensed across many sectors and applications, thereby driving incremental revenue streams.

Criterion 4: Brand Loyalty

Requirement: New technology enhances the company's brand, creating and/or nurturing brand loyalty.

Criterion 5: Human Capital

Requirement: Customer impact is enhanced through the leverage of specific technology, translating into positive impact on employee morale and retention.

Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning of all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized Award candidates
6 Conduct global industry review	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible Award candidates, representing success stories worldwide
7 Perform quality check	Develop official Award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best-practice Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select recipient 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • Present Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10 Take strategic action	Upon licensing, company is able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning 	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.