Cool Vendors: The Best Cool Vendors Change the Competitive Landscape — A Gartner Trend Insight Report

Published: 11 December 2019   **ID:** G00451088

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CIOs should consider Cool Vendors whose coolness factors — innovative, impactful and/or intriguing — align to the enterprise's culture and technology profile. Early adopters should consider offerings that are both innovative and impactful and thus potentially game-changing.

Opportunities and Challenges

- Cool Vendors that are both *innovative and impactful* hold the greatest potential for changing the competitive game. Changing the game carries greater risk; this is most appropriate for early adopters.

- A technology that is both *intriguing and impactful* means that it is likely to create a temporary differentiation. This will appeal to more mainstream buyers and fast followers.

- Cool Vendors whose offerings are *innovative and intriguing* often have questionable value in the short term, yet greater potential value in the future. Buyers have an opportunity to influence the development of these offerings.

What You Need to Know

- Reap the benefits of a game-changing technology and use case by preparing your team and your business to understand — and potentially mitigate — the higher risks inherent in the most advanced Cool Vendors' solutions.

- Assess a Cool Vendor's willingness to work with you to continuously enhance its technology or use case such that the initial period of differentiation is elongated.

- Be judicious about vendors who meet just one of our coolness criteria. The value may be unclear (innovative only), an incremental improvement over the current best practice (impactful only) or questionable (intriguing only).

Insight From the Analyst

The Coolest Cool Vendors Change the Competitive Game

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The coolest Cool Vendors can change the competitive game for early adopters. History shows that organizations that apply advanced technologies to unique use cases earlier than others reap the largest benefits. Those who delay realize smaller gains. The adage, "the early bird gets the worm," is true with regards to the "coolness" factor.

However, adopting advanced technologies and solutions from the very coolest providers is not for the faint of heart. Game changing means paradigm changing — *changing the way people work, what they believe and, potentially, their human abilities*. Changing paradigms is more difficult than waiting for others to prove the benefits. It's also riskier. Game-changing providers — those with innovative *and* impactful solutions — are also the most likely to get acquired. Those that are too far ahead of the market may be at financial risk, endangering customers that become dependent on their solution. Furthermore, the hurdles to full-scale adoption (as described above) are higher and can take longer than anticipated, thus reducing the early advantages.

Cool Vendors with intriguing *and* impactful solutions can create a temporal differentiation for initial buyers and are most appropriate for mainstream and fast-follower enterprises. The differentiation might improve your market position, enhance your brand or increase constituent satisfaction. However, such differentiation is largely attributed to a first-mover advantage, combined with a strong use case implementation; others will catch up and replicate your solution.

A Cool Vendor solution that is simply innovative risks being technology for technology's sake; the value is unclear (beware the $900 Internet of Things juicer!). Gartner's Cool Vendor process helps identify vendors who innovate to create real value

CIOs should consider Cool Vendors whose coolness factors align to their enterprises' culture and technology profile. Consider: Are you an early adopter, a fast follower or more conservative?

Technologies surrounding artificial intelligence (AI)/machine learning(ML), computer vision, various types of sensors, blockchain and cloud continue to provide a solid base of coolness.

In this Trend Insight report, we'll explore the following:

- How are Cool Vendors leveraging advanced digital technologies to change the game?

- How are Cool Vendors making it easier for mainstream buyers to adopt AI and implement advanced digital capabilities?

■ How are Cool Vendors making the use of new technologies more effective, ethical, secure and safe to reduce personal, business and societal vulnerabilities?

Executive Overview

Cool Vendors represent an opportunity to explore technologies earlier in the Gartner Hype Cycle (see "Understanding Gartner's Hype Cycles"). Many are pioneers in emerging markets, such as those featured on the post-trigger position of the Gartner Hype Cycle.

When considering technologies for an early-stage proof of concept, CIOs and their organizations will assume more risk but also will find opportunities to create new, differentiating and valuable solutions. As we've said previously, Cool Vendors represent a tangible source for building and expanding an innovation competency. Earlier use of technologies and more practical implementations demonstrate the value of innovation to solve today's business problems and rethink how value can be created in the future.

Gartner's 2H19 Cool Vendor research profiles 89 Cool Vendors in 23 reports. This overview highlights representative Cool Vendors — those that represent a category or class of value for buyers. These Cool Vendors are transforming user experiences and business processes and disrupting business models. Technologies surrounding AI/ML, computer vision, various types of sensors, blockchain and cloud continue to provide a solid base of coolness. Some of these are paradigm-changing and come with higher risks in order to reap the greatest benefits ahead of others.

More mainstream buyers should assess a Cool Vendor's willingness to work with you to continuously enhance its technology or use case in order to extend the initial period of differentiation. Be more judicious of Cool Vendors that meet just one of our coolness criteria. The value may be unclear (innovative only), an incremental improvement (impactful only) or questionable (intriguing only). Readers should review the referenced reports for more providers to consider. See Figure 1.

Definition

Gartner's definition of a Cool Vendor is a small company offering a technology or service that is:

Innovative — Enables users to do things they couldn't do before.

Impactful — Has or will have a business impact, not just technology for its own sake.

Intriguing — Has caught Gartner's interest during the past six months.

A more detailed explanation of the Cool Vendor selection criteria is available in Note 1.

Figure 1. Three Attributes of Coolness: Innovative + Impactful Changes the Game
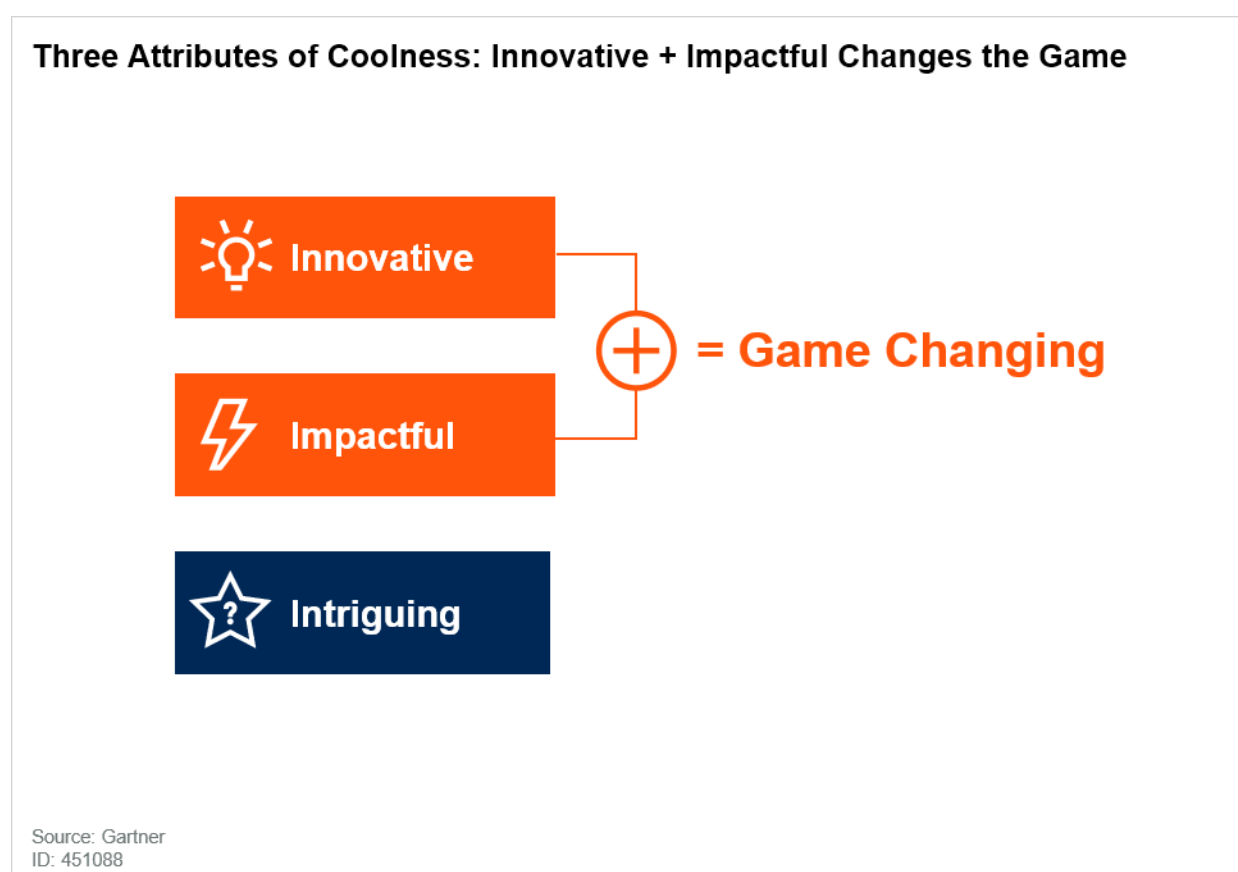
Research Highlights

How Are Cool Vendors Leveraging Advanced Digital Technologies to Change the Game?

Modern and advanced digital technologies are not only changing the nature of work, they are also changing the notion of what it means to be human. Many of these Cool Vendors are enhancing (augmenting) aspects of what it means to be human. For example, immersive experiences can change human-machine interaction between the digital and physical worlds. Display technologies are no longer just screens presenting vivid images to people. Rather, innovative display technologies empower users to feel the texture of pictures via tactile sensations.

Some Cool Vendors are using technology to create new digital value propositions and business models — many are using AI and ML as critical enablers. The most interesting Cool Vendors are innovating by using AI to create completely new uses cases and transform currently manual processes such as within supply chain. Some examples:

- Immersive experiences will move beyond the current focus on visual performance as with virtual reality (VR) or augmented reality (AR) to become an intuitive and ambient experience in which devices and sensors will create a smart space surrounding the user. Tanvas provides a programmable surface haptic multitouch technology that enables 3D haptic sensations on 2D touch surfaces, creating deeper immersive experiences. This has broad applicability across many industries (including transportation, retail, fashion, medicine, and even arts and entertainment) and for a digital society. A haptic guiding display could assist blind or visually impaired people to navigate across digital and physical worlds.

- Computer vision has become the leading-edge disruptor in the big bang of AI technology breakthroughs. Computer vision is disrupting business models beyond the transportation industry (with autonomous vehicles), expanding into banking/insurance/finance (identity authentication and property analysis), utilities (for asset management) and retail (shopper behavior). Deepomatic's platform enables data scientists to design purpose-built video recognition systems and to operate image recognition applications in production.

- Bluecrux can produce a digital supply chain twin of a global supply chain directly from the underlying transactional data. It can do this by combining cloud, big data and ML. It can then utilize this dynamic supply chain model to enable improved supply chain decision making (see "Cool Vendors in Supply Chain Execution Technologies").

- RightHand Robotics (RHR) is solving the technically challenging small-item piece-picking problem, by combining multiple advanced technologies like AI, vision systems and innovative gripper technologies. RHR is targeting its solutions at what Gartner refers to as the robotic picking challenge. This is offering an autonomous individual an item-picking solution that has the intelligence, visual acuity and dexterity to recognize and deal with products with various shapes, orientations and characteristics (see "Cool Vendors in Supply Chain Execution Technologies").

Recommendations

- CIO's across all industries should consider how computer vision and haptic technologies can be attached to the surface of a screen to improve users' immersive experience.

- Application leaders can use solutions that can process videos by analyzing what is happening in real time and developing a semantic analysis that defines relationships between scenes and the content of the video overall.

- Disrupt existing supply chain operating models by exploiting innovations in digital supply chain twin capabilities and new robotic gripper technologies.

Related Research

- "Cool Vendors in Display and Vision, 2019": This report highlights three Cool Vendors with differentiated immersive products and solutions that can change the game within various industries and change the human condition.

- "Cool Vendors in AI for Computer Vision: Creating Viable Technology Across Industries": Advances in 3D art software, image sensors, cameras and deep neural networks have enabled the use of computer vision systems for a wide variety of applications in numerous industries. We profile four emerging vendors that could offer practical business benefits for application leaders.

- "Cool Vendors in Supply Chain Execution Technologies": More advanced supply chains look to exploit emerging and innovative solutions to advance their supply chain technology maturity and advance their digital visions. Supply chain technology leaders should use this research to identify emerging vendors that can drive enhanced business value.

How Are Cool Vendors Making It Easier for Mainstream Buyers to Adopt AI and Implement Advanced Digital Capabilities?

Understanding how and when to apply AI is key to mastering the opportunities it presents, while avoiding many potential pitfalls and overcoming challenges along the way. From our surveys, the top two reasons organizations plan to use AI is to improve decision making/recommendations and process automation. However, lack of AI and ML skills and lack of a solid data foundation are hindering the ability to deploy projects. There are paradoxes with AI. The more we use advanced and automated techniques, the more opaque are the models. Profiled companies in this wave employ a variety of AI techniques to conceal AI and "black box" ML models into easier-to-understand, more transparent models. Think of this as "AI on AI."

- AI governance and explainability are key themes for many Cool Vendors in AI reports. For example, Fiddler Labs offers an ML platform with a built-in explainability engine that makes models more transparent, checks for fairness and compliance, and supports monitoring and investigation of model behavior.

- Many (perhaps all) industries can benefit from more explainable and governed AI decisions. KenSci offers an AI platform for healthcare organizations with packaged models that are explainable and transparent, allowing health systems to better identify utilization and variation

and improve hospital operations. Kyndi offers an AI platform targeted at highly regulated industries with a cognitive search capability that generates explainable AI models using natural language processing.

- DarwinAI delivers optimized and explainable AI in its platform based on "AI building AI." Explainable AI is a set of capabilities that describes a model, highlights its strengths and weaknesses, predicts its likely behavior, and identifies any potential biases. It can articulate the decisions of a descriptive, predictive or prescriptive model to enable accuracy, fairness, accountability, stability and transparency in algorithmic decision making.

- Metaliquid amplifies the value of video by facilitating findability, accessibility and user experience by using neural network-based ML to describe the visual and audio content of video as machine-readable text. The product enables new use cases such as media monitoring for risk and compliance (e.g., brand recognition, celebrity recognition in broadcasts) and video as a sensor (e.g., quality control on production lines, smart check-out in retail).

Recommendations

- Build trust with business stakeholders by understanding their explainability needs within the business context and operational environments in which AI will be used. Foster diversity in AI teams, data and algorithms to counteract bias-rooted errors in AI. Diversity in people, data sources and problem selection is a key aspect to reduce risk in using AI.

- Develop or hire people in key AI roles related to AI ethics, governance and policy. Look for privacy/brand remediation and AI behavior forensic specialists who can evaluate models and perform investigations when AI fails to reduce risk.

- Empower lines of business by leveraging platforms that can deliver tailor-made computer vision to ensure stakeholders get the most out of their images and tackle image-related problems.

Related Research

"Cool Vendors in Enterprise AI Governance and Ethical Response": This report profiles five emerging vendors that data and analytics leaders should watch. They are helping organizations better govern their AI solutions and make them more transparent and explainable. CIOs who adopt these Cool Vendors can accelerate their organizations' AI learning curve and get to value faster.

"Cool Vendors in Supply Chain Management Technologies": This research highlights five emerging vendors that can advance supply chain technology maturity and industry digital visions and drive enhanced business value for supply chain organizations.

"Cool Vendors in AI for Computer Vision: Creating Viable Technology Across Industries": This report profiles four emerging vendors that could offer practical business benefits for application leaders.

How Are Cool Vendors Making the Use of New Technologies More Effective, Ethical, Secure and Safe to Reduce Personal, Business and Societal Vulnerabilities?

With the expanded use of advanced digital capabilities such as AI and ML, organizations must make technology investments that enable them to use data to both generate business value and protect customer privacy. This is critical to building trust, complying with rapidly expanding privacy regulations and protecting the brand. New approaches are also needed to ensure trusted interactions among a network of participation. Cool Vendors in this wave support privacy-protecting data sharing. They also are transforming processes to securely manage negotiable documents as digital assets using blockchain technologies.

- Duality Technology's specific setup allows both privacy-preserving data analytics, as well as secure data collaboration and data-sharing options, since the model allows multiple entities (e.g., in a competitive landscape) to share and analyze sensitive data with zero knowledge in a multicore, multinode setup.

- Inpher offers its trademarked "Secret Computing" technology. The product enables data processing and analytics activities without exposing the (personal) data itself. The technology is based on a combination of multiparty computation (MPC), with encryption supported by a large prebuilt algorithm library (see "Hype Cycle for Privacy, 2019").

- Enigio Time has created trace:original, a blockchain-based solution to allow full management of negotiable documents as digital assets. Negotiable documents (those that grant rights to the person who holds the document, rather than a specific person) are previously signed physical documents, and can include mortgage and loan agreements, trade finance documentation, bills of lading, and powers of attorney (see "Cool Vendors in Blockchain Applications").

- Lumeos enables users to own and monetize their data across the internet while keeping their personal information anonymous. Internet users typically don't get to choose who shares their data and how other organizations profit from it. Lumeos's decentralized infrastructure for data sharing allows users to monetize their own data while controlling their privacy.

Recommendations

- Assess the differences in application and effectiveness of differential privacy, homomorphic encryption, security computing and other approaches like dynamic deidentification in privacy preservation for analytics, especially for the organization's own unique use cases

- Identify gaps in your organization's privacy management program by investigating Cool Vendors, specifically with a focus on analytics and business intelligence (ABI).

- Experiment with tactical narrow-scope deployments of blockchain technology that digitally prove ownership of negotiable documents as digital assets in the short term, with a focus on innovation-driven business value, accompanied by an understanding that many such offerings are yet to be proven at scale in production.

- Adopt applications that enable consumers and users to own, control and monetize their own personal data, whereby consumers sell access to service providers of their choosing.

Related Research

- "Beyond GDPR: Five Technologies to Borrow From Security to Operationalize Privacy": Security and risk management leaders can find a set of balanced controls for privacy and security in the implementation of five key technologies. IRM, CASB, DCAP, DLP and file analysis all help to control personal data and support compliance.

- "5 Areas Where AI Will Turbocharge Privacy Readiness": Challenges in the privacy landscapes require modern solutions. Security and risk management leaders need to include artificial intelligence applications for rapid, inclusive and consistent support for compliance insight, vast and continuous data discovery, and subject's rights management.

- "Cool Vendors in Blockchain Applications": The purpose and benefits of blockchain solutions across the enterprise are evolving rapidly. We profile three emerging vendors that application leaders should watch to address core challenges in blockchain for digital ownership and interoperability required to scale.

- "Cool Vendors in Blockchain Security and Privacy": Advances in blockchain access and data security, and data privacy are needed to move project experiments and proofs of concepts into production. We profile three emerging vendors that help application leaders with blockchain data security and privacy.

Related Priorities

Table 1. Related Priorities

Priority	Focus
CIO Excellence in I&T Operating Model Design and Strategy Execution	Enterprise focus on digital transformation increased markedly this past year. CIOs must lay the digital foundation and transform the I&T operating model to enable strategic execution at digital speed.
CIO Innovation and Strategic Business Change Leadership	In the digital era, the CIO serves as both business leader and IT leader. This initiative focuses on the first job, showing how the CIO can contribute to an enterprisewide business strategy.
Cross-Industry Innovation and Disruption	Create business and customer value by understanding and leveraging innovations, processes and technologies from multiple industries.

Source: Gartner

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Build AI-Specific Governance on Three Cornerstones: Trust, Transparency and Diversity"

"Build Trust With Business Users by Moving Toward Explainable AI"

"Survey Analysis: Computer Vision Drives Enterprise Adoption of Artificial Intelligence"

Note 1 Understand the Cool Vendor Selection Criteria

- The vendor should be less than 10 years old.

- The vendor must not feature in a Vendor Rating or in a Magic Quadrant.

- The vendor must not be previously featured in a Cool Vendor report.

- The vendor must be an independent business, a discrete subsidiary (i.e., tracks or reports revenue separately) or spinoff of another vendor. In this way, subsidiaries of major vendors may be considered unless they are majority-owned entities.

- The vendor's annual revenue must be less than $100 million.

- The Cool Vendor product needs to be available at point of submission for inclusion in a Cool Vendor report.

- The vendor must be considered innovative or transformative for IT products, services or initiatives. A Cool Vendor isn't just about technology — it may also include services.

- Previously profiled Cool Vendors can be profiled again only in the retrospective Where Are They Now? section of a Cool Vendor report.

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