Backcast the Enterprise's Next Future State Vision

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Future state visioning (also known as "backcasting") is a compelling technique that executive leaders should exploit to help direct activities that require a holistic systems view, monitoring the triggers that gauge whether the projected future will occur.

Overview

Key Findings

- Executives and other leaders too often begin strategic planning exercises by detailing the current state situation and tactical issues that must be addressed within the next fiscal cycle only.
- Planning horizon less than three to five years, excluding longer term macro/micro economics and market conditions (especially customer/constituent or partner demand), results in tactical "strategies."
- Digital efforts can cannibalize businesses' value propositions and existing services, making short-term planning less relevant in exploring "what if" and "art of the possible" scenarios.

Recommendations

Executive and functional leaders should:

- Persuade executives and board members to consider challenges from nontraditional competitors.
- Explore "far horizon" scenarios beyond three to five years.
- Use backcasting techniques to help spawn new product development and to enter new markets.

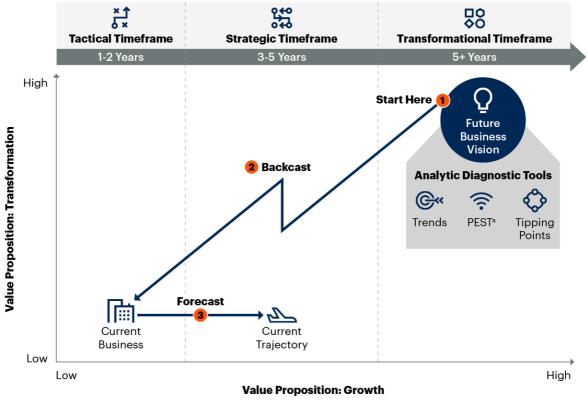
Introduction

As a starting point, backcasting requires selecting a far horizon, five plus year time period as opposed to forecasting near horizon, one to three years. Backcasting is best exploited to aggressively explore "the art of the possible," based on micro/macro-economic, as well as potential digital technology, trends that will impact and drive demand, market and ecosystem participant changes (see Figure 1).

Figure 1: Digital Business Transformation Requires Backcasting

Digital Business Transformation Requires Backcasting

Backcasting Begins With a Future Business Vision



Source: Gartner

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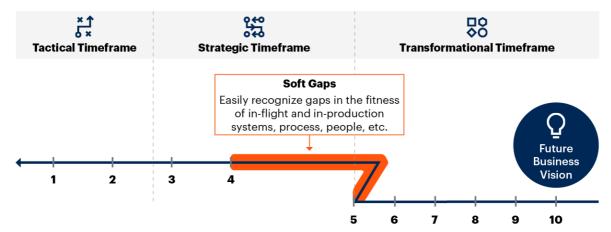
Gartner defines "backcasting" as the process of setting a five plus year target state and looking backward in time from an assumed set of possible future states/conditions, enabling planners to identify conditions to anticipate and respond as the trajectory toward the target state unfolds (see Figure 2).

Includes PEST analysis variants744616_C

Figure 2: The Act of Backcasting

The Act of Backcasting

What Must Have Occurred By Year X to Realize Future Business Vision?



Tipping Point and PEST Analysis		Yea	ır Range				
Trends (3)	Trigger(s)	10	9	8-5	4	3-1	
А, В	Variables to monitor		•			0	Analysing trends triggers and time frames for which they must be tru the future busine
С						0	
D				•	0	0	
E, F, G, B					0	0	vision to be re

Source: Gartner 744616 C

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Enterprises engaged in this future planning should also consider:

- Examining microeconomic factors that might further project and contextualize future regional or industry specific conditions
- Using PESTLE (Political, Economic, Social, Technological, Legal and Environmental) or STEEPLE (Social, Technological, Economic, Environmental, Political, Legal and Ethical) or TPESTRE (Technological, Political, Economical, Social/Cultural, Trust/Ethics, Regulatory/Legal, Environmental) to frame future trends under consideration. ¹
- Analyzing the demographics of people (e.g., customers, employees, partners, etc.) and attributes which may make them more amenable to different products, services, uses of technology and more

- Whether consumption among consumers, businesses, investor interest, is accelerated or decelerated by regulatory regimens
- Using five-plus year enterprise goals to spark the future business vision. For example, with service providers, Gartner has challenged them to consider goals, including:
 - Number of customers served (percentage increase); increase in customer "wallet share"
 - Number of additional or new business services
 - Number of online capabilities and applications supported/integrated
 - Metrics to measure progress, like costs to serve, increased usage of infrastructure, use of online services, partnerships
 - Metrics around spending/budget management, productivity, efficiency
 - Increased percentage of remote services capabilities
 - Measurable improvements in operating costs, profits

This list is not meant to be exhaustive, but rather to be instructive in considering the world in which the organization may operate in five plus years. ² Keen readers will note that this approach does not begin with the current state. It begins with considering the world three to five or more years out and then works back to the current state before forecasting the trajectory forward toward that future state vision. This approach is relevant for all organizations, not just the private sector. Public sector organizations should also exploit future state visions using backcasting, beyond the current fiscal cycle in work such as transport, sustainability and climate change considerations. ³

Backcasting imagines a point in the future to understand the steps it will take to get there. To do this well:

- The time frame must be beyond the enterprises' typical comfort zone. This forces the participants to identify more solutions beyond what is considered probable/feasible at this moment, but at a point in time beyond what we are doing to satisfy near- and short-term needs.
- Executives must explore the question of what can change, or what must change, to meet the uncertainty of the future.

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 Triggers/markers/early indicators must be identified, assessed and tracked to determine what must change to make the desired future viable — and to determine whether that future is unfolding.

"When uncertainty is high, and the problem is complex and persistent, a long-term view is essential."

— Futures. Essence of backcasting, Karl Dreborg, 1996

Backcasting, in turn, enables normative scenarios as paths to alternative futures that vary according to their desirability. Desirability comes from the target "world" imagined previously (e.g., all CO2 is eliminated). Executives must be ready to acknowledge that the future state vision may require a view of whole systems and processes replacement.

Analysis

Persuade Executives and Board Members to Consider Challenges From Nontraditional Competitors

One high-level exercise recommended by Gartner is to exploit a tipping point approach. ⁴

Consider the following examples for various tipping points under consideration. ⁵

- 1. Price/performance and capability improvements (usually technology-driven, as in solar, wind, batteries, EVs, etc.).
- 2. Consumer acceptance and adoption (i.e., EVs and residential solar are increasingly "favored").
- 3. Business adoption and embrace (i.e., commitments to fleets of EVs; securing "green energy" contracts).
- 4. Investor interest and capital commitments (i.e., midsize wind turbines, solar farms or even residential solar and municipal EV buses are being financed by investors and "green bonds").

5. Government regulations change incentives (e.g., eliminating tax subsidies for fossil fuels, like the oil depletion allowance in the U.S., or inexpensive leases on Federal lands; and adding carbon taxes, tariffs; and offering tax breaks on EVs and renewables).

Gartner expertise can help guide clients in some plausible hyper deflationary digital (tech/digitalization) scenarios; some of these are general (like Moore's Law, which applies to PV solar backplanes; Metcalf's law, a networking effect that applies to online digital ecosystems that exploit platforms; et al), while others are quite industry-specific. Consider any one of the following industry considerations as examples to inspire your thinking about what will be important in your future state vision beyond the five plus year time frame (see footnotes for detailed suppositions and considerations):

- Macro Energy Utility and/or Fossil Fuel Businesses. ⁶
- Auto Manufacturing and Electric Vehicles.
- Healthcare and Ageing Population Demographics 8
- Pharmaceutical Industry and Supporting Ecosystem ⁹
- Consumer Large Scale Asset Sales ¹⁰
- Manufacturing ¹¹
- Quick Service Restaurants (QSEs) ¹²
- Semi-to-Fully Autonomous Operations in Agriculture and Mining ¹³
- Banking and Global Access to Liquidity 14

"Every organization and its employees knows what they do, some know how, but very few articulate why they do what they do."

 Simon Sinek, Start With Why: How Great Leaders Inspire Everyone to Take Action

Nontraditional competitors, such the digerati, must also be considered as possible entrants into your industry. The *digerati* (companies that were "born digital" like Google, Facebook, Alibaba, Tencent, Amazon, Baidu, Didi, Uber and Airbnb) and some companies that have successfully managed a "DNA transplant" (like Microsoft and Apple). Each has moved into "adjacent" industries and verticals through their platforms and ability to create ecosystems based on their further leveraging the "six C's of data." The six C's are cloud computing, collection, curation, correlation/contextualization, and the "crunching" and "coining" [monetization] of customer data. ¹⁵

Recommendations:

- Explore "far horizon" scenarios beyond three to five years, and consider "macro" trends that could influence mergers/acquisitions, divestitures, product/service development, joint ventures, geographic expansion, new services and customers within potential business models and designs.
- Examine "micro" (industry specific) trends that could impact specific enterprises customer preferences, value propositions, financial engineering, new or evolved capabilities.
- Remap, remodel, and remake. "Remap your industry" (i.e., what fundamental industry paradigms must you rethink?), "remodel your enterprise" (i.e., determine what you need to become) and "remake yourself" (i.e., as a relevant leader in such a future world).
- Be clear that there is no one, singular, future business vision. For the purposes of backcasting, change the state and/or assumptions of each tipping point, and a new future business vision will come into focus. Given the continuing levels of uncertainty, do not hold back from considering alternative conditions and, as a result, alternative visions.

Explore "Far Horizon" Scenarios Beyond Three to Five Years

Children all over the world are used to their elders asking them the well-worn question, "what do you want to be when you grow up?" It follows that achieving them will require a series of successful efforts that will improve their early development. Asking, "what do you want for dinner tonight?" however, will not provide the same result. This metaphor is akin to asking about a budget allocation for the next fiscal cycle. It solves only short-term issues. Additionally, considerations about these choices beyond immediate satisfaction are left for another day.

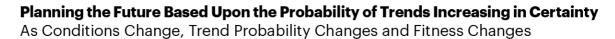
Misperceptions about long-range planning and failures to achieve lofty goals over long-term time horizons may interfere with the ability of some executives to consider this approach. ¹⁶ Gartner contends that executives must consider "macro" trends that could influence any number of future choices: mergers/acquisitions, divestitures, product/service development, joint ventures, geographic expansion, new services and customers within potential business models and designs.

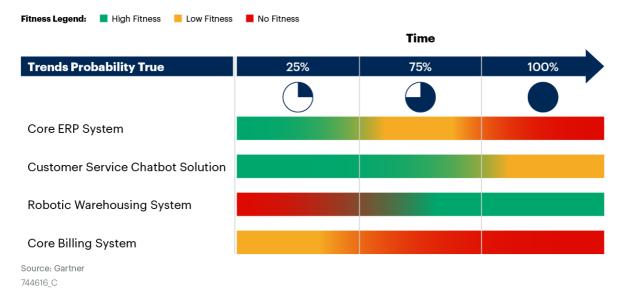
Gartner posits the following for further consideration: "To architect for real-time adaptability and resilience in the face of uncertainty, a future state vision beyond the current fiscal cycle and the short-term time horizon, a longer term time horizon is required." ¹⁷

Steve Jobs once said, "You can't connect the dots looking forward; you can only connect them looking backwards." ¹⁸ Also, to paraphrase Jobs around the initial, groundbreaking iPod launch, he noted that: "A few years ago, if you asked people what type of enhanced, portable music player they would like, it would have been a smaller CD player with smaller, more dense CDs; streaming music was not on the radar screen." Hundreds of years earlier, Edmund Burke once said, "You can never plan the future by the past." ¹⁹

"Contrary to popular opinion, identify the future state first and current state second."

Figure 3: Planning the Future Based Upon the Probability of Trends Increasing in Certainty





Gartner.

In the stylized roadmap in Figure 3 above, as the probability of trends becomes more realistic, the fitness of an existing or anticipated investment will change. In the figure, we see that a robotic warehouse solution becomes more attractive as the trends increase in their percent of likelihood. However, the downside to the core ERP and billing system also come into focus. Considering that the target state first allows for such diagnostics as events unfold, allow for considerations to plan setback schedules to course-correct in advance to take advantage of the changing conditions and/or mitigate the risks they pose.

In 2019, Ford Motor Company projected a 20 year plan in which the company would reduce single-use plastics by 2030. ²⁰ In 2021, it has an even bolder view to sell only electric cars in Europe in 2030. ²¹ These changes have major implications for all aspects of the organization. Lisa Brankin, managing director at Ford of Britain and Ireland, told Radio 5 Live's Wake Up to Money programme on 21 May 2021 that many other variables will help the consumer make that choice: "... range, the charging infrastructure, the lack of information available to customers and obviously the price as well." The U.K. government is seeking to increase the charging infrastructure and mine lithium in the country to help alleviate some of these concerns. Regulation, however, is not enough.

As noted previously, most projections about electric vehicle price/performance and capability improvements indicate that in three to five years, they will have a less expensive purchase price for consumers — in addition to lower operating costs. Midsize EV sedans are now available in China for under \$20,000. Most legacy vehicle manufacturers are now aggressively committing to EV or hybrid-only autos within five to seven years. The scenario for light trucks is five to ten years. Governments and municipalities are already committing to fleets of EV buses and other delivery vehicles. With that in mind, disruption is already occurring here.

The lesson from this example is not only what this vision means to Ford and other automobiles manufacturers, but that their supply chain partners, governments, insurance companies and companies in retail seeking to lower their own carbon footprint with rapid and nearby delivery. The various variables and assumptions could allow an organization to determine how to pivot against such a 2030 target — which may or may not happen by then.

For those considering backcasting in other industries, it's easy to see that there are a number of variables and assumptions to make and track. Such variables and assumptions will be specific to each reader's industry and their leadership team assessment of future possible situations.

Recommendations:

- Charter a strategic planning group to continuously update future state scenarios greater than five years that consider evolving customers and potential value propositions; required capabilities; potential competitors; new risks; technology innovations; new product/service requirements; investments. ²²
- Exploit backcasting techniques during to challenge status quo positions –
 especially during disruptive events (e.g., COVID-19, climate change and new
 competitors)
- Use roadmapping to illustrate the impact of changing trends upon the fitness of considered investments which become more or less fit for purpose as the trends become more probable.

Use Backcasting Techniques to Help Spawn New Product Development and to Enter New Markets

Ontological philosophies of how business succeeds are provided at the highest level of abstraction. Ansoff is well-known for providing a view of growth based upon the state of products and markets, new or existing. Porter provided a view of sources of competitive advantage (e.g., differentiation, costs) and breadth of target market (e.g., broad, narrow). Private equity ontological thinking is more about right now than about a future set of new markets, new products or new customers.

Those supporting Ansoff's ontology will find backcasting helpful in imagining new markets and new products. In this view, the risk is higher because of increased uncertainty that an investment will provide the desired value proposition. Those supporting Porter's ontology will find value in this technique to enter new markets where differentiation will increase value to customers. If an organization has a "private equity" ontology, this technique will not help in the short-term. Such organizations create an investment thesis, create debt by leveraging assets, cut costs relentlessly, focus upon (primarily) today's cash flow and invest in the parts of the organization that dominates competitors — selling off anything else that does not.

The epistemology of each ontology includes market participants, capabilities (e.g., internal and shared) and the content of the capabilities for which people, and things, engage in the elements (e.g., products, networks, value streams, processes, technologies, etc.). In turn, people's behaviors have an aggregate impact upon the ecosystem of participants both inside and outside the organization. Value is gained or lost as a result of people's actions in response to products, market conditions and participants, and each other.

The epistemology gives us a place to start when considering factors that will shape the future environment to be backcasted. It also helps to consider the state of additional constraining conditions with frameworks such as STEEPLE or PESTLE or TPESTRE ²³ to imagine those conditions at some point in the future — which would need to be true for new products to operate in new markets that are attractive to new customers.

To consider how the belief system concerning success for the organization impacts the future vision beyond five plus years, Gartner provides the following actionable recommendations for executives to put into place immediately. Once a five plus year vision is in evidence, and triggers are identified up to today in five or more years for each year to make the vision true, the team will be teed up for the next level analysis (see Figure 4).



Figure 4: Use Your Backcasting Workshop to Tee Yourself Up for Next Order Analysis

Use Your Backcasting Workshop to Tee Yourself Up for Next Order Analysis Future Hard Gap Analysis

Fitness Legend: ■ High Fitness ■ Low Fitness ■ No Fitness											
Hard Gap Assessment by Capability and Operating Model Resource			Investment Type and Fitness			Anecdotal Understanding of Hard Gap Status					
Timeframe	Capability	Operating Model Resourse	Fear	Fact	Faith	Trade-Offs Toward Future Business Vision	Reasons Trade-Offs Are Acceptable				
In-Production Today	А	People									
		Process									
		Technology									
		Application									
		Information									
This Fiscal Year's (FY) Investments	А	People									
		Process									
		Technology									
		Application									
		Information									
FY+1	Α	Analysis repeats per FY									
FY+2	Α	Analysis repeats per FY									
FY+3	Α	Analysis repeats per FY									

Source: Gartner 744616 C

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This is beyond the scope of this paper, but Gartner believes that it's important for the reader to know that this is not the end of the journey, but rather the beginning. The ability to backcast will require diagnostics to vet the fitness of operating model resources by capabilities and investment categorization. ²⁴ The intersecting point is a qualitative assessment of the capability's fitness, and supporting operating model resources, to deliver the desired future business vision forward from the point in time they are assessed. This is forecasting on the basis of the future business vision and the backcast. Fitness is illustrated here as traffic lights, which heat map the results of the assessment.

Recommendations:

- 1. Use storytelling workshops with business executives to imagine a five plus year future state unfettered by today's reality, which highlights potential changes in an uncertain world and is **not** constrained by the current fiscal cycles. ²
- 2. Repeat this "future-scaping" exercise every year, revisiting prior projects, highlighting signposts and developments that are accelerating or decelerating projected changes and inflections
 - Identify critical tipping points that might influence the probability of the fiveplus year future state
 - Consider the digital intersections of multiple industries to engage new potential customers ²⁷

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- 3. Prepare for this meeting by setting boundaries and providing a starter kit of assumptions and wireframed conditions for future vision time zones.
 - Change the thinking (e.g., discuss product development versus innovation versus system innovation). ²⁶
 - Agree that backcasting is about planning when the actual conditions for the future state are uncertain.
 - Use epistemology and wireframes like PEST variants (e.g., STEEPLE, PESTLE, TPESTRE) to consider the conditions of these elements at some point in the future, beyond the current fiscal cycle and beyond the realm of actions for which you believe you can control the outcomes.
 - Determine proxy representatives for each of these elements to explore/refine/change further.
 - Use principles to keep the work at pace and remind participants of criteria for envisioning the outcome (e.g., new market(s), new customer(s), new product(s) in this order).
 - Timebox the work to focus the minds of all participants.
 - The last hour should allow the facilitator to walk the participants backward from the target state, one year at a time, to identify the expected triggers or markers that must be in evidence by that time to meet the future business vision. Continue until you are within five years from today.
 - At this point, begin questioning the state of both the broader world and existing capabilities — and support operating model constructs and their intuitive fitness to help you on a journey toward the target (these are known as soft gaps).
 - Agree to use this in the next investment prioritization discussion, examining whether today's fiscal cycle investments support today's immediate investment needs (e.g., fear-based, fact-based) or will support future investments based upon faith of the journey toward the target state vision.
 - Set a date for the next meeting.

- Prepare for the next meeting by expanding for example:
 - Analytic techniques to present and track the markers and candidates for future alternative scenarios.
 - Different states and conditions for the markers. Remember that any long-term view has multiple dimensions, not a single future state, based upon the assumption of the markers or triggers which may, or may not, come to fruition. This will allow for different future business visions with different considerations.
 - Envision potential extremes on each of the dimensions, limiting the number of future business visions, and try to build real options into plans to prepare for them.

Evidence

¹ More on PEST and its variants can be found via this Wikipedia page. Also, see A Tapestry (TPESTRE) of Trends for Strategic Planning.

² Other considerations may include megatrends, such as in "Top Megatrends for 2020" or using current and past research on Gartner's Top 10 Technology trends as inspiration for consideration.

³ See Visioning and Backcasting for UK Transport Policy (VIBAT), PCSD Toolkit, Good institutional practices, Italy and Envisioning Carbon-Free Land Use Futures for Sweden: A Scenario Study on Conflicts and Synergies Between Environmental Policy Goals.

⁴ To see this in action, read this research note: Urgent Action Needed: Energy Markets Are Changing Faster Than Energy Companies to see how energy companies, and near neighbors, can consider their response to long term market change.

⁵ This list is just a set of example categories which may be considered. It is not meant to be prescriptive or exhaustive. The number is not meant to be a limit, either.

⁶ Consider that the price/performance (p/p) of renewables (solar, wind and batteries) has improved by >75% during the past 10 years. If this trend were to slow to even 50% p/p improvement during the next 10 years, the cost/barrel of oil (in energy produced in kWs or BTUs) would have to be <\$20 per barrel. Frackers currently struggle at \$40/barrel. Can they possibly keep up? This price point doesn't consider likely carbon taxes and other regs AND consumers and businesses (especially in the U.S., Western Europe and ANZ) "going green." "Going green," and p/p of renewables will have a profound impact on energy utilities and fossil fuel companies on a purely cost competitive basis beyond the impact of government regulations and consumer, business and investor sentiment.

⁷ Electric Vehicles use 10% to 20% of the parts/components of ICE (internal combustion engines) vehicles. The price/performance and capabilities (range, fast charging, charging stations) of batteries will improve rapidly with scale and there will be ongoing improvements in electric motors. EVs already have lower maintenance and operating costs, and over-the-air software upgrades address some problems and provide enhancements. And more automated manufacturing techniques in new factories will further reduce costs. So the "cross-over pricing" for EV vs. ICE cars will likely be <3 years. And of course, this could be accelerated by government policies (taxes, tariffs, subsidies; fast charging infrastructure) and consumer preferences. Disruption is already occurring here and will likely accelerate in the automotive OEM and first tier parts companies.

⁸ COVID-19 has dramatically accelerated the acceptance and deployment of remote diagnostics and even treatments in healthcare. This is already having a profound impact on providers. With improved "wearable sensors" (e.g., watches, implants, home "testing" [e.g., of blood, urine, saliva, etc.]), coupled with genetic profiles as part of PHRs (personal health records), the healthcare industry is now moving rapidly, especially in China. This could be a profound change in addressing a rapidly aging population and populations with chronic illnesses. Service robots will someday have a play here (Japan and China are aggressively pursuing this direction). Obviously regulations and consumer acceptance may slow down progress, but COVID-19 has accelerated it.

⁹ Using data and analytics Al-driven experiments and genetic engineering and other technologies, multiple COVID-19 vaccines and treatments have emerged in <10 months from a "standing start," vs. the typical seven-plus years to get a drug to market. Will this revolutionize the pharma (especially development and clinical trials) industry? Will govt regs and consumer acceptance of this approach change?

¹⁰ For over a century, the used car and real estate businesses and their sales tactics have been the butt of jokes, movies, etc. While the sale of used cars online existed before (e.g., CarMax), the growth has exploded during COVID-19 and companies like Carvana (\$45B) now have market capitalizations that easily exceed those of most car makers. And there are at least eight of these online entities worth billions of dollars in market cap, based on public markets or venture funding rounds. The tech is highly detailed (often 3D) imaging with automated ordering, supply chain mgmt. and fulfillment, customer service, etc.

¹¹ COVID-19 has forced many manufacturers and warehousing companies to shorten supply chains and even to accelerate on-shoring with remotely managed and more automated operations (e.g., think AZN or MSFT or Google cloud data centers); many are now accelerating the deployment of 3DP and robotics (the stocks of these companies have risen dramatically during the past six months; more recently, the stock prices of 3D Systems and Stratasys have more than tripled due to higher than expected revenue growth). How will this trend impact other manufacturing companies?

¹² Most QSRs have adapted well to COVID-19 (vs. more traditional restaurants) with online ordering, curbside ordering and pickups and deliveries, and broader menus and more process automation in the food preparation. Is this a temporary COVID-19 phenomena or a more permanent evolution?

¹³ Agriculture and mining are moving rapidly to more remote control (of vehicles) and ultimately semi- and fully autonomous operations (hyperautomation) to increase efficiencies and to improve output and perhaps even quality. Microirrigation and diminished use of fertilizers and pesticides due to data and analytics and more controlled conditions (e.g. greenhouses, increasingly powered by renewables at a lower price, are growing rapidly) that promise improved outputs and quality control (60%+ of legal cannabis is grown indoors).

¹⁴ The banking industry is being challenged by new alternatives for measuring, storing and exchanging value. Cryptocurrencies' market cap grew from 155 billion in 2017 to 2 trillion in 2021. From 2,000 cryptoinitiatives in 2017 to 10k+ as of 2021. In the research note "The illusion of exterminating central powers with blockchains" we are saying that the unbinding and reintermediation pattern we witness with the internet now is happening with money and value exchange in general. Decentralized finance is currently at the Peak of Inflated Expectations. Deflationary technologies, first mover advantage for gaining network effect for exponential growth is paramount to succeed in this new world. What's the banks and financial institutions backcasting assumptions for scenarios in which global access to liquidity will be the new normal?

- ¹⁵ For more information about digerati and their influence, see Maverick* Research: The Digerati Are Becoming Part of 21st Century Societies' Infrastructure Services.
- ¹⁶ Strategy Implementation: What Is the Failure Rate? Feb 2015, Journal of Management & Organization 21(2):237-262, Candido, Santos.
- ¹⁷ Another source for future considerations may be found here: Expert Insight Video: Accelerating Digital Business Using Gartner's Global Scenarios.
- ¹⁸ The Top 10 Lessons Steve Jobs Taught Us, Forbes.
- ¹⁹ Edmund Burke Quotes, BrainyQuote.
- ²⁰ Ford Plans for All Cars Sold in Europe to Be Electric by 2030, The Guardian.
- ²¹ Our future is in motion: Ford Motor Company Reflects on 20 Years in Sustainability With New Goals Ahead, Automotive World.
- ²² Strategic planning may seem "out of fashion," but perhaps a re-think and charter for the group may invigorate it and bring greater success. Examples can be seen here: Putting "Strategy" Back in Strategic Planning. CIOs asked to support or lead strategic planning will benefit from The CIO's Guide to Strategic Engagement.
- ²³ PESTLE stands for Political, Economic, Social, Technological, Legal and Environmental. STEEPLE stands for Social, Technological, Economic, Environmental, Political, Legal, and Ethical. TPESTRE stands for Technological, Political, Economical, Social/Cultural, Trust/Ethics, Regulatory/Legal, Environmental.
- ²⁴ See 3 Essential Steps to Evaluate the Business Case for New Product Investments for more on the classification of investments by Fear, Fact and Faith.
- ²⁵ Another technique of further interest, but not addressed directly here, is that of Sci-Fi prototyping first shared with the world by Professor Dr. Vic Callaghan. The technique explores the implications of future technologies and the non-technology elements that enable them. This paper, "Pervasive Computing and Urban Development: Issues for the individual and Society," was presented at the United Nations World Urban Forum (Habitat) 'Cities: Crossroads of Cultures, Inclusiveness and Integration?' within the IRFD Theme: "The Role of Cities in an Information Age" on 13 to 17 September 2004, Barcelona, Spain, giving a quick to grasp insight as to the use of the concept; but, it is not meant to fully represent the technique as it is in use today.

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²⁶ Backcasting the Future, ResearchGate.

²⁷ For further examples, see Tech Providers 2025 Insight: Must-Have Capabilities to Thrive in the Manufacturing Industry and Factor Seven Types of Digital Entities Into Business Strategy.

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