



# **Complicated vs. Complex** B2B Manufacturing Revenue Growth and the Risk of Oversimplifying Strategy

*A Consilium Global Business Advisors Whitepaper*

*"Everything is both simpler than we can imagine, and more complicated than we can conceive."* – Goethe



*"For every problem there is a solution which is simple, clean and wrong."* — Henry Louis Mencken



## Complicated & Complex - B2B Manufacturing Revenue Growth and the Risk of Oversimplifying Strategy

### Executive Summary

Today's manufacturing executives are brutally busy. Competing demands on their personal and corporate resources leave little margin for error in their incessant instinctive decisions; and the ever increasing flood of information demands efficiency in processing. Understandable pressure builds to simplify everything - the gold standard becomes a few slides with several bullet points, or two 3 sentence paragraphs. Those are the digestible chunks, common wisdom holds, which capable executives can process efficiently to make sound business decisions.

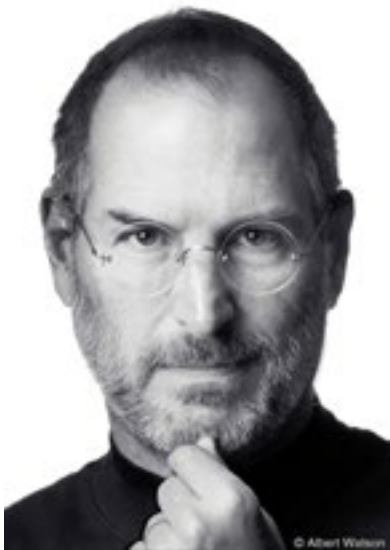
Yet markets are moving in the opposite direction - evolving from complicated (linear) to complex (chaotic and morphing). Operations are ever more complicated, but top-line revenue growth is increasingly complex.

The two forces seem irreconcilable. Business can't operate in a vacuum. It can't artificially simplify (although many try!) to satisfy executive resource constraints; yet it can't allow important decisions to be made by default due to sclerotic over-analysis.

The solution is the creation of a new role for companies - one that provides a skill set and perspective which are necessary to navigate complexity but fundamentally incompatible with day-to-day operations. Manufacturing companies need a revenue growth "ombudsman" - an independent advisor fluent in their markets and complexity yet able to distill the complexity into actionable areas of strategic focus.

*“Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple. But it’s worth it in the end because once you get there, you can move mountains.” Steve Jobs*

Steve Jobs by Walter Isaacson



## Time, Bandwidth & Tyranny of the Urgent

Everyone’s heard it. The key to success today is to simplify things...everything.

The premise is that executives, bombarded with messages, shouldering daunting workloads and facing complex scenarios have limited available processing capacity for information which falls outside the core operational areas upon which they focus. Therefore, common wisdom suggests, the solution is to present information in super simplified form and substance. This affords the preoccupied manager the possibility of grasping a concept during a fleeting moment of cognition.

Simplification is the proverbial double edged sword. It is elegant & functional (think Apple) and effective (think Strunk & White’s Elements of Style.) It is appropriately recognized as a manifestation of clarity of thought, and as a proxy for ability to execute.

And practically, for executives deluged with competing priorities, concise presentations afford the opportunity to digest larger numbers of diverse concepts, and to efficiently recognize which ones they feel merit a deeper dive.

Therefore, common wisdom also holds:

- Presentations can’t exceed 10 slides (mercifully)
- All written material must be scannable (because who reads through now....) with headers and bulleted lists as an ‘inline preview’

And research reinforces:

- B2B executives are more likely to watch a 2 minute video than to read a document
- Website navigation and UX (user experience) clearly impact engagement

But experts disagree, for example:

- Longform content (1,000 word well developed articles) is more engaging and satisfying, insist some
- Short content (500 word articles or Vine videos) is more successful, argue others

Clearly, almost everyone today is hyperkinetically busy and overwhelmed by information. Capturing someone’s attention, even briefly, is fundamentally difficult. That is, in essence, the primary B2B revenue growth challenge facing manufacturers today.

*“It’s easy to confuse the merely complicated with the genuinely complex. Managers need to know the difference: If you manage a complex organization as if it were just a complicated one, you’ll make serious, expensive mistakes....the main difference between complicated and complex systems is that with the former, one can usually predict outcomes by knowing the starting conditions. In a complex system, the same starting conditions can produce different outcomes, depending on interactions of the elements in the system.”*

## Conflating Concepts with Strategy

This pressure for simplification, though, has a troubling corollary. So conditioned to consume information in double-distilled super-smooth shots, business executives are conditioned to reject ideas which don’t conform to that format - a format which is ill suited for today’s intensely complex revenue growth environment.

The problem is that there’s a big difference between presenting a “concept” in an easily digested concise way vs. articulating (much less executing) a corresponding intricate strategy. Yet that is precisely what many do. Executives opt to execute discrete tactics (e.g. ‘SEO their website’ or ‘Find a distributor in India’) rather than develop comprehensive, corporate goals-driven strategies. And ‘experts’ whose expertise is limited to niche specialties, present a seductive option to executives seeking ‘simplified’ assistance in manageable chunks.

Business owners expect a capable corporate attorney to intuitively envision a broad landscape of risks and exposures, and to distill those into a series of business decisions and policies. They should expect the same of revenue growth advisors (internal or external) - but the prerequisite in both cases is the ability to envision the strategic landscape in its entirety.

That means that elegantly simple high-level concepts must summarize the very complex systems over which they lie. But that simplified concept is no substitute for a strategy which is robust and intricate to match the complexity of the business growth environment. This challenges those executives and advisors who cling to a ‘complicated’ model, even as markets have evolved to be tremendously ‘complex.’

## An Introduction to Complexity Theory & Complex Adaptive Systems

Building a revenue growth strategy that will thrive amidst complexity is itself a complex undertaking. The first step is familiarity with principles of complexity, and how ‘complicated’ contrasts with ‘complex.’

*“It’s easy to confuse the merely complicated with the genuinely complex. Managers need to know the difference: If you manage a complex organization as if it were just a complicated one, you’ll make serious, expensive mistakes....the main difference between complicated and complex systems is that with the former, one can usually predict outcomes by knowing the starting conditions. In a complex system, the same starting conditions can produce different outcomes, depending on interactions of the*

elements in the system.”<sup>1</sup> That probably sounds like the evolution of your business over the last 10-20 years!

Senior Fellow John Kamensky of the IBM Center for the Business of Government defines the two concepts as follows:<sup>2</sup>

“**Complicated** - Basically, a complicated problem is predictable and linear in nature. There is a clear beginning, middle and end, with both variation and repetitiveness involved. With complicated problems, it is possible to identify and model the relationship between the parts, for example by using logic models. Furthermore, the relationships among the parts can be reduced to clear, predictable interactions.”

“**Complex** - In contrast, a complex problem possesses sufficient intricacy that behavior cannot be predicted via linear relationships; such problems are also marked by a high degree of self-organizing behavior.”

Three properties determine the complexity of an environment:

1. number of potentially interacting elements
2. interdependent connections among the elements
3. degree of diversity among those elements

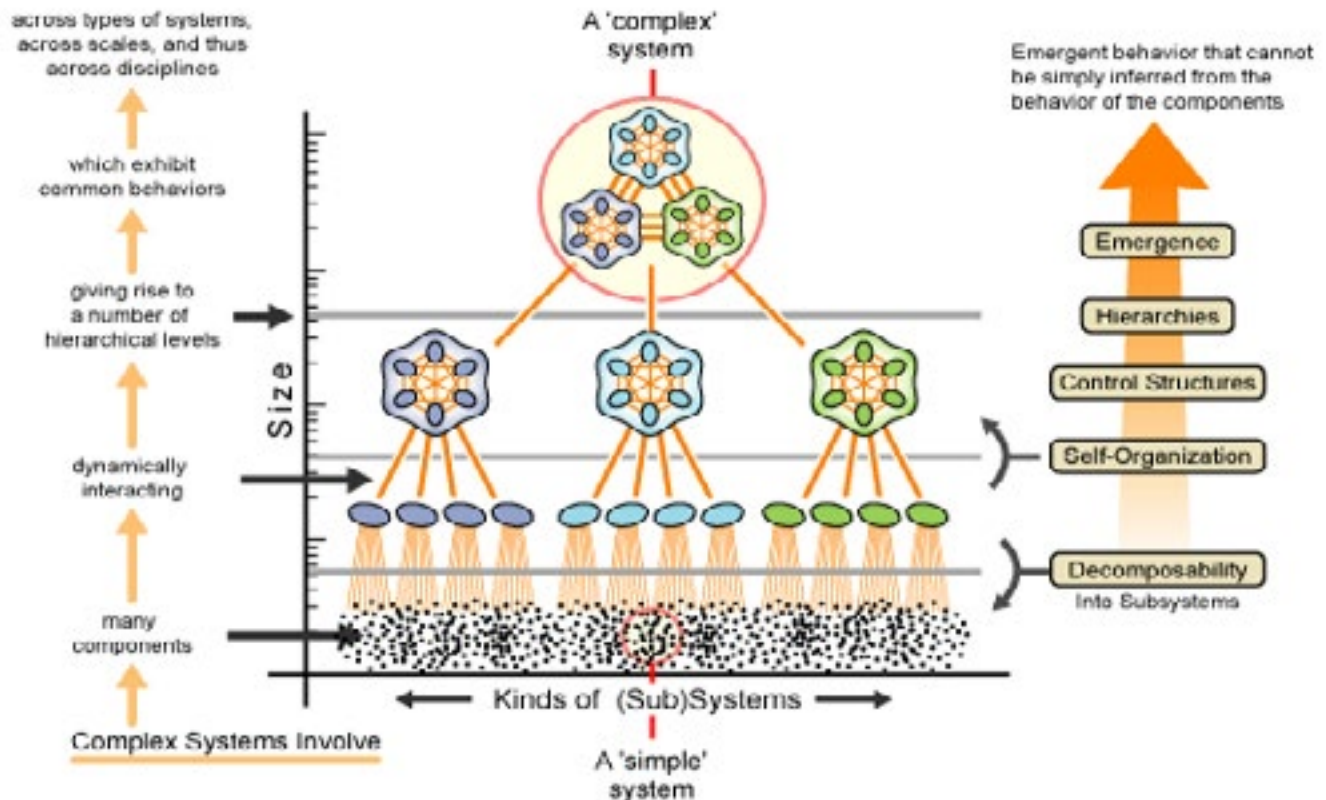
Three properties determine the complexity of an environment:<sup>3</sup>

1. number of potentially interacting elements
2. interdependent connections among the elements
3. degree of diversity among those elements

Collectively these factors determine the ‘emergent’ nature of the system which “reciprocates, adapts and reproduces over time....(the result is that) the properties of the emergent system are more than a simple sum of the effects of their behaviors.”<sup>4</sup>

1 Harvard Business Review, Gökçe Sargut and Rita Gunther McGrath, [Learning to Live with Complexity](#), September '11  
 2 BusinessOfGovernment.org, John Kamensky, [Managing the Complicated vs. the Complex](#), Fall/Winter '11  
 3 Harvard Business Review, Gökçe Sargut and Rita Gunther McGrath, [Learning to Live with Complexity](#), September '11  
 4 [Complexity Theory for Public Policy](#), Dr. Goktug Morcol, Penn State University

## Characteristics of Complex Systems



*“We can’t untangle complex systems in our minds, and we can’t intuit our way to a better working world. (Technology may help, but) must be augmented with perception, reasoning, cognition, and intuition.” Jeffrey O’Brien*

**Complex adaptive systems (CAS)** are dynamic systems able to adapt in and evolve with a changing environment. That means that “there is no separation between a system and its environment (since the system continuously adapts)...change needs to be seen in terms of co-evolution with all other related systems, rather than as adaptation to a separate and distinct environment.”<sup>5</sup>

CAS have several defining attributes:<sup>6</sup>

1. **Distributed Control** - no single centralized control mechanism & overall behavior usually cannot be explained merely as the sum of the parts
2. **Connectivity** - complexity results from the inter-relationship, interaction and inter-connectivity of the elements. The implication is that a decision or action by one part of the system will influence all other related parts, but not in any uniform manner.
3. **Co-evolution** - elements in a system can change based on their interactions with one another and with the environment
4. **Sensitive dependence on initial conditions** - changes in the input characteristics or rules are not correlated in a linear fashion with outcomes. Small changes can have a surprisingly profound impact on overall behavior, or vice-versa, a huge upset to the system may not affect it.
5. **Emergent order** - complexity in this context refers to the potential for emergent behavior in complex and unpredictable phenomena. As a system is built on a network of many agents acting in parallel, there is a constant action and reaction to what other agents are doing, and thus nothing in the environment is essentially fixed. Eventually from the interaction of the individual agents arises some kind of global property or pattern, something that could not have been predicted from understanding each particular agent. Further, order can result from non-linear feedback interactions between agents, where each agent goes about his own business.
6. **Far from equilibrium** - According to 1989 research by Nicolis and Prigogine, when a physical or chemical system is pushed away from equilibrium, it can survive and thrive. If the system remains at equilibrium, however, it will die. The ‘far from equilibrium’ phenomenon illustrates how systems will create different structures and new patterns of relationships. Complex systems function best when they combine order and chaos in an appropriate measure

---

5 MIT, Serena Chan, [Complex Adaptive Systems](#), November '01  
6 Ibid

*In the industrial manufacturing world, most operational, manufacturing and 'bottom-line' issues are complicated; often very complicated. But they are not complex. Relationships are clear and capable managers can reasonably model the impact of pulling a given lever, or even pulling several levers simultaneously.*

*Many business execs naturally assume that the 'top-line' (revenue growth) can be managed in a similar way. With the preceding introduction to complicated vs. complex systems, the flaws in that assumption are immediately clear. Revenue is byproduct of successfully navigating a tremendously complex system.*

7. State of paradox - Research in CAS indicates dynamics combining both order and chaos. This reinforces the view of bounded instability or the edge of chaos that is characterized by a state of paradox: **stability and instability, competition and cooperation, order and disorder.**

## Complexity, B2B Revenue Growth & Perspective

In the industrial manufacturing world, most operational, manufacturing and 'bottom-line' issues are complicated; often very complicated. But they are not complex. Relationships are clear and capable managers can reasonably model the impact of pulling a given lever, or even pulling several levers simultaneously.

Many business execs naturally assume that the 'top-line' (revenue growth) can be managed in a similar way. With the preceding introduction to **complicated** vs. **complex** systems, the flaws in that assumption are immediately clear. Revenue is a byproduct of successfully navigating a tremendously complex system.

A selection of broadly categorized examples of interrelated elements that impact B2B revenue directly, and should impact growth strategy, include:

### Customers

- your customers' customers are evolving
- what value do they expect
- what industry challenges do they face
- what regional circumstances impact them
- where are they manufacturing
- how is their customer base shifting geographically / demographically / etc.
- how do they define their business challenges
- where do they search for solutions
- how do they evaluate / compare / select / contract for solutions
- what's the horizon for management decisions

### Industry

- what innovations / best practices are developing
- what major raw material / input cost drivers are changing
- competitive pressures
- end user expectations
- pending regulatory changes

## Markets

- where is growth
- where is value
- where will growth be in a decade
- differences in how your product is used
- how decisions are made

## Geopolitical

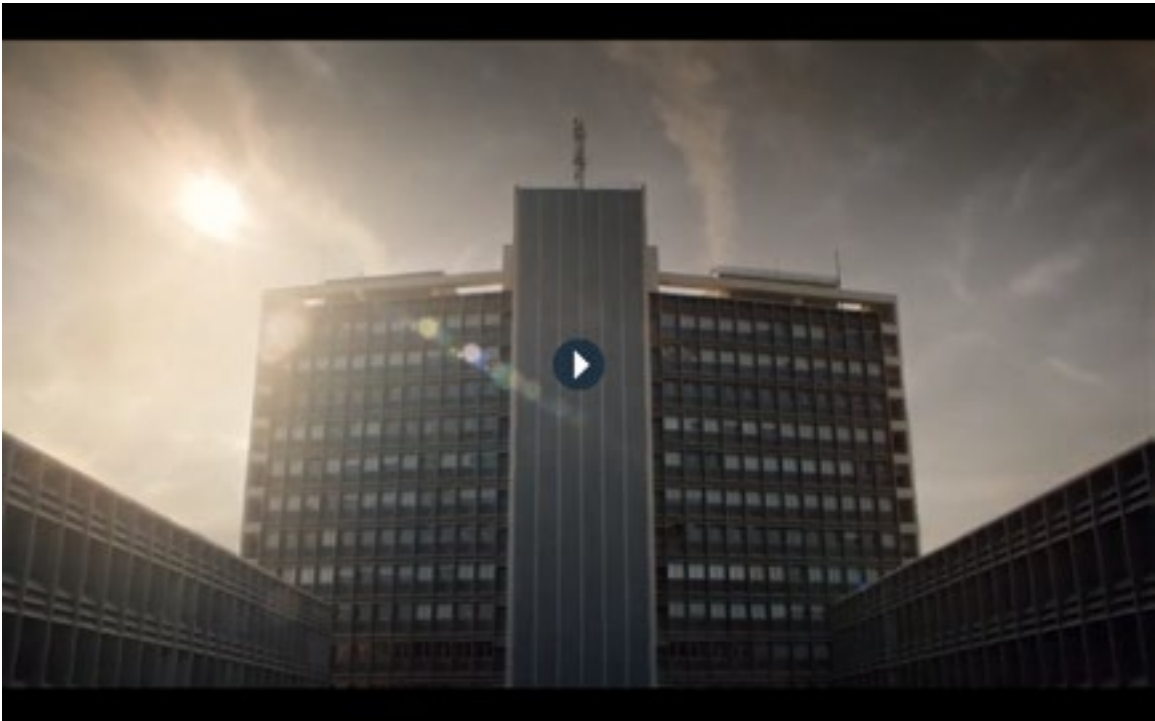
- currency rates
- political risk
- trade alliances
- monetary policy / growth rate
- logistics
- tariffs
- demographics

## Business model expectations

- local touch or online
- channel or direct
- remote support

Even a vastly oversimplified (there it is again!) list like this illustrates the tremendous complexity of the environment which determines B2B revenue for advanced manufacturers.

And here's where the obsession with simplification of strategy reveals itself to be shortsighted. Companies can easily revert to a linear, 'complicated' (or simplistic) view of their business - reacting to isolated metrics as this brilliant video by Adobe illustrates. Misinterpreting a single errant indicator reverberates throughout global supply chains with cascading implications.





*So it's easy to identify the challenge, but the solution is elusive. How can executives account for complexity without succumbing to "paralysis by analysis" and the inevitable resulting reversion to habitual (albeit decreasingly effective) approaches?*

In reality, every 'element' in the revenue growth system is impacted by every other factor in a truly complex interrelationship, and the implications to your business are continuously evolving. These include:

- profitable customer profile
- USPs
- Pricing
- R&D roadmap
- staffing
- sales model
- marketing approach
- risk mitigation
- budget
- channel
- target markets
- focus industries

Clearly the business development, revenue growth, top-line aspect of business is a CAS, and as such it is different than the operational side which is quite 'complicated' but generally linear.

That creates a difficult challenge for many manufacturing companies which tackle revenue growth with linear approaches.

## **Managing, planning & leading in a state of complexity**

*So it's easy to identify the challenge, but the solution is elusive. How can executives account for complexity without succumbing to "paralysis by analysis" and the inevitable resulting reversion to habitual (albeit decreasingly effective) approaches?*

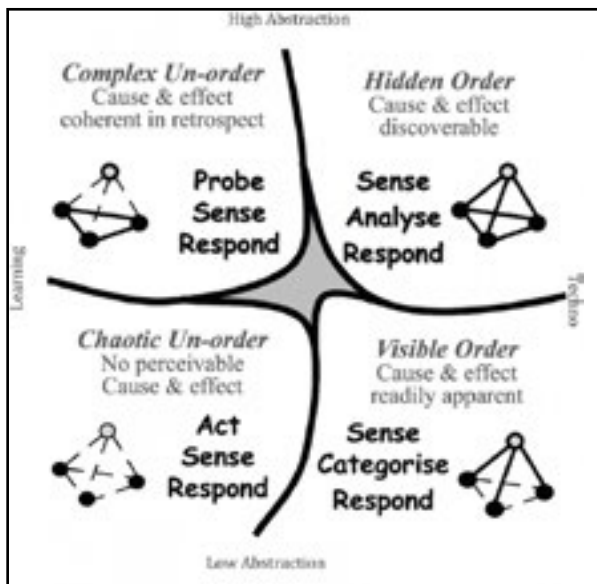
The nature of complex systems by definition means that they are not well suited for some checklist of tactics. Yet the complexity makes the identification of action areas and risk mitigation inherently difficult. It's uncomfortable and chaotic - and executives have a strong inclination to redefine the challenge as a simpler, 'complicated' one and to dodge the complexity by conveniently labelling complex concepts as not yet mature.

Therein lies the paradox of successfully navigating the complex systems which shape the business growth environment of mid-size manufacturers.

- markets are too complicated to fully conceptualize
- the system must be simplified in order to plan, manage and act
- inadequate simplification results in unmanageable chaos
- oversimplification results in inadequate strategy

The key therefore is the ability to simplify just enough - enough to focus appropriately and to monitor critical influences and relationships. This is an individual capability, and typically not a corporate function. It requires a number of individual attributes:

- ability to intuitively discern key variable relationships for focus
- impatience with static execution, or inversely an expectation that a plan must continuously adapt to changing conditions
- voracious appetite for information across disciplines and industries
- comfortable with changing mind frequently in response to new data
- willingness to defend position as conditions change (when those interrelationships aren't core)
- high level strategic reasoning and expertise in tactical execution (to understand what's feasible)
- global experience (because even domestic businesses are subject to a myriad of global forces which will impact their business)
- comfortable with technology
- simultaneously able to simplify key concepts & areas of focus without oversimplifying the complexity of the environment
- ability to visualize future state and build upon predictive data
- ongoing exposure to multiple industries and business models (typically means that outsource/consultant models are the only suitable solution)
- relatively disengaged from day-to-day considerations and not steeped in company's formative assumptions
- comfortable challenging deeply held assumptions



That's a tough role to fill. That aggregation of skills is rare. And the bigger challenge for manufacturers is that the role of complexity "ombudsman" for revenue growth is incompatible with day-to-day execution. Traditionally businesses hire key roles based on corresponding silo experience. The operations manager, understandably, needs solid operations credentials. The sales manager must have a track record of "exceeding quota in the target industry." The inevitable result, though, is a flat or narrow view of the environment.

A limited perspective, in turn, increases the propensity to adopt 'tactics' as 'strategic solutions' without a full appreciation of how they fit. In another hilarious video, Adobe tackles the feckless adoption of social media channels for business growth.



## Building the capability

But if simplification isn't the appropriate antidote to complexity, how can a company CEO identify a series of discrete action steps to support revenue growth? How can the hypothetical be applied to the everyday challenge of business development?

Simply...but not easily. The typical manufacturing CEO must:

1. recognize the complexity of their market
2. accept the limitations of their perspective
3. commit to a strategic initiative to embrace complexity
4. eschew oversimplification
5. identify talent options internally / externally
6. foster a culture that embraces complexity and seeks opportunities within it
7. persist

*“Change is easy. It happens by itself...Progress, on the other hand...is deliberate and difficult. But it’s not random.”* Jeffrey O’Brien

Speaking more specifically, or actionably, the typical industrial manufacturing company must embrace fundamental business development certitudes.

- B2B business has shifted from ‘selling’ to ‘buying’ - and the buying process is rapidly evolving
- buyers and markets are only artificially defined by geographic limitations
- technological changes, including additive manufacturing, will massively impact their business in the medium term

And then they must identify an “ombudsman” to help them navigate and thrive amidst the complexity. The revenue growth ombudsman must:

- be free to challenge status quo and assumptions without repercussion
- have no org chart or budget responsibility (if they have a “horse in the race” they simply can’t be dispassionate)
- possess most (ideally all) of the attributes identified above

In most cases that role will be filled by an outsider. (By definition there are precious few internal candidates who have no org chart or departmental budget responsibility.)

This role must be a dotted line to the CEO or President, and there must be frequent, consistent, scheduled review of themes, ideas and conclusions. An engagement with a report deliverable isn’t satisfactory - the complex environment evolves continuously. And of course, simply appointing an “ombudsman” is merely an expensive and symbolic gesture if what results is a quixotic wandering without impact on revenue growth.

## Implications to revenue growth for mid-size manufacturers

B2B manufacturers will hesitate to take this step. That’s their conservative nature. So they should perhaps start by considering the opportunity cost of failing to embrace the real complexity of today’s revenue growth environment. Markets are evolving so quickly that latency of only a year or two can easily compromise a stable, seemingly vibrant enterprise.

Although the decay of a business often manifests early as slowing and unpredictable growth, long before stagnation or actual contraction, human nature leads management to discount the slowing or respond by pulling more levers. If revenue growth were only a ‘complicated’ challenge, that might work. But as we’ve seen above, as a ‘complex’ challenge it requires a different approach.

**Mid-size manufacturers therefore have a choice** - albeit one which is distant enough to be discounted as hypothetical.

They can insist on the oversimplification of the revenue growth environment in which they must operate. Alternatively they can embrace the complexity, and seek areas of advantage and opportunity within that complexity.

The former is simpler, less expensive in the short-term and far less uncomfortable. It's the approach most will take - whether due to lack of will or perspective. The latter will result in challenging many traditional tenets of the business - including some dearly held. It will require resources. And it may be the key to resilience, vibrancy and growth in the next decade.

images: [photofugue](#) & [networkingaction](#)

---

## Revenue Growth for Complex Markets

- **B2B Digital Marketing**
- **Global Sales Growth**

### About Consilium Global Business Advisors

About Consilium Global Business Advisors: Consilium assists American manufacturers in applying process excellence to their business development. In other words we help lean, well managed companies with rock solid bottom lines effectively and consistently grow their top lines to match. We work primarily with mid size industrial manufacturing companies, guiding them through a journey of designing and executing business grade B2B inbound marketing and focused, profitable global market expansion.value through international penetration and growth management.

***Consilium is well positioned to help.***

Connect With Us:

[www.consiliumglobalbusinessadvisors.com](http://www.consiliumglobalbusinessadvisors.com)

