



Pharma 2029

Pharma's Future
Today

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With support from the
Pharma 2029 Team

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EXECUTIVE SUMMARY

Pharma has the truly global challenge to adapt as hundreds of nations go through fast-moving change. The *Pharma 2029 Report* provides a way to see the adaptive capacity to meet pharma's challenge through the *Evolutionary Spiral*. This model shows that senior pharma executives can operate at the highest levels of the spiral that offer the most complex strategies for key pharma problems that will resist simpler solutions.

This *Evolutionary Spiral* model was tested through an online survey with over 150 participants drawn largely from the senior ranks of major pharmaceutical companies. The survey invited responses that address four key problems in pharma: discovery, development, regulation and business models. A substantial number of industry executives were drawn to the most complex strategies which can be employed at the tipping point where fast moving change offers the potential for either chaos or higher order.

The survey results identify a capacity to thrive in today's complex environment owned by those who see the way through chaos. This ability is found at the *authentic* level of development, and supported by many executives who can meet the leadership challenge that is focused on innovations that can solve critical industry problems. The responses also indicate a strengthening of collaborative capabilities to complement the enduring core of competitive ability within pharma. Yet interviews and discussions for this study signal there is a potential danger for pharma as people feel that corporate cultures risk undermining its most capable problem solvers, who often feel unsupported. Against this threat, the *Pharma 2029 Team* looks to tap into the potential at the highest reaches of the *Evolutionary Spiral*.

INTRODUCTION

"The significant problems we face cannot be solved at the same level of thinking we were at when we created them."
~Albert Einstein¹

It would be an understatement to say that the pharmaceutical industry faces increasing complexity. Unlike most other providers of health care products and services, pharma is a truly global player. As such, its business operations must address the distinct regulatory, clinical and commercial challenges of hundreds of nations. It must adapt and change as those nations keep pace with shifting demographics, evolving disease needs and emerging science along with new socio-political and economic realities.

In the past, simplistic, linear, cause-and-effect models of health were addressed by likewise simple health care and pharmaceutical approaches. A single infection could be addressed with a simple antibiotic, for example. It was clear how research would determine safety and efficacy, how regulators would respond to study data, how clinicians would prescribe or payments would be made. Today's disease conditions, however, are no longer acute. They are chronic and co-morbid. And today's pressure cooker of regulatory, clinical and payment systems foments flux and uncertainty. So strategies that solved the problems in a simpler time are no longer good enough.

Fast moving change has overwhelmed the simplistic solutions of the past. Industry no longer faces national or regional issues, but rather complex, interrelated, interdependent, global issues that affect not only health care, but global economic productivity.

As a result, the *Pharma 2029 Today* team believes that the industry is fast approaching a tipping point. Soon, industry will no longer have a choice about *whether* it will address the complexity of its circumstances. At that tipping point, the choice will be *how effectively* it will address that complexity.

The *Pharma 2029 Today* team went looking for ways to address how to leverage the energy of a tipping point to increase industry effectiveness and we believe we have found one. It is called the *Evolutionary Spiral* and it is described in this report, along with the results of a pilot survey we conducted to determine if it could be applied successfully.

Those executives who participated in the survey acknowledged today's challenges. A majority agreed with this statement:

Conditions have changed for pharma. Companies discover strategies that worked in the past no longer create success. Stock prices are half their historic highs. Sales growth is down to single digits and projected to fall further. Profits are uncertain. Products are going off patent and even the most successful companies are vulnerable to competition. All companies are affected by the unexpected safety problems of others and the shifting sands of government policies. The industry has a bad reputation. Employees, once proud, are dispirited and demoralized.

Yet, the survey results also suggest that a majority of the participants are ready to meet this challenge. Our results in this project indicate that industry is moving towards the more efficient *Evolutionary Spiral* levels that will develop higher value and more encompassing solutions to the problems we probed in our study. We see hopeful signs that hidden away in many companies are people with the ability to lead industry through the chaos and complexity of current challenges.

We were most keen to find signs that those people are at work in pharma. We believe we have those signs in this report. If we can find these people who can adapt to complexity and have them recognized and organized to create a critical mass, then company effectiveness, adaptability and prosperity will increase.

THE EVOLUTIONARY SPIRAL MODEL

Human beings solve problems by adapting to the circumstances that life presents to them. As problems become more complex, the adaptations must also become more complex or the person, organization, company or country declines and dies. This makes sense to most of us where children are concerned. The life circumstances of a toddler are different from those of a teen and adaptation occurs accordingly. Getting a cookie from Mom when you're three is a different challenge than getting the car keys from Dad when you're sixteen.

As adults our lives become even more complex. We're challenged to develop personal and cultural responses to manage the added complexity. We must find the way to master our environments and for some of us, those challenges are immense. Those adults who work in the very complex global circumstances of the pharmaceutical industry are more challenged than those charged with improving performance on the factory floor, for example. The good news is that despite popular notions that development ends after adolescence, scholars have shown that adults can and do continue to develop.²

Research in adult development, and increasingly in neurobiology's demonstration of the plasticity of the adult brain, has shown that human beings develop toward increasing complexity throughout life. Researchers have shown the development toward increasing complexity to be true in various settings, with various populations, as well as across gender and cultural lines. Indeed this research shows that there are *levels* of responses to our environment—childlike, magical responses give way to complex, non-linear, systems-oriented responses as the need requires. Different researchers call these responses by different names, yet one constant remains true: development happens in stages, in relation to the challenges that are presented by the environment.

Those capable of more complex responses confront our increasingly fast-moving, ever-changing environment in novel, efficient, effective and important ways. To put it simply: those capable of broader, more encompassing responses to their circumstances function better.

The map of the Evolutionary Spiral we used was crafted by Dr. Glenna Crooks and based on the work of many researchers in the field of adult development. This map uses a color coding system with descriptions drawn from multiple sources to describe seven levels that we find most relevant to the pharmaceutical industry.³

Beige, Survival, Help Me: Facing harsh life conditions, the prime directive is to survive and the basic goals are to satisfy needs to stay alive. Instincts and reflexes form the coping systems, as seen in newborn infants, patients with late-stage Alzheimer's disease and people under extreme duress, such as in post-Katrina New Orleans. This level is seen in small biotech companies whose one promising experimental product is rejected by regulators or large companies whose blockbuster is challenged suddenly by safety concerns.

Purple, Magical, Tribal We: Seeing a threatening world full of mysterious powers, the prime directive is to gain safety and security, generally through the family and larger groups. Tradition and ritual are the coping systems, as seen in tribal orders, religions, Disney World, and sporting events. This is an "us vs. them" world that appears in "corporate tribes" as well. The "Tribal We" is at work in sales meetings, which are carefully structured with rituals, music and images to incite the tribe as it goes to battle against others.

Red, Power, Gratify Me: Recognizing that life is a jungle where the strong prevail and the weak serve, the prime directive is to assert power and avoid shame. Exploitation and dominance create the coping systems, as seen in war lords, gang leaders, heroes and low EQ company managers. This level can be found in overstressed executives who cheat on expense forms or break rules to get what they want, but it's also in the maverick scientist who won't take "no" for

an answer and creates a “skunk works” to investigate compounds that a company has decided to abandon. Patient activists also operate at this level, the model of which was ACT-Up in the early days of HIV/AIDS.

Blue, Conformist, Righteous We: Realizing that a higher power is in control, the prime directive is to sacrifice immediate gratification in order to gain a greater benefit later. This level creates stable order through hierarchies. Obedience to the higher authority (teachers, religious leaders and governments) and conformity to rules are the coping systems. This is seen in large companies, bureaucracies and “true blue” patriot gatherings. Industry encounters this level wherever stability and security are dominant interests, such as in regulatory agencies, formulary committees and payers.

Orange, Achievement, Competitive Me: Looking for opportunities to make things better, the prime directive is to excel, to win and to succeed. Pragmatism, objectivity and strategic plans provide the coping systems for marketplaces, laboratories and strategic enterprises as well as on Wall Street and Rodeo Drive. This level uses the stability created in the blue, conformist stage preceding it as a base to be entrepreneurial and compete for success. Industry’s mastery of this level is what attracts investors, and it is measured in earnings reports and pipeline promise.

Green, Affiliative, Holistic Us: Believing that we are all part of common humanity and have a shared responsibility to each other, the prime directive is to assure everybody receives consideration. Others matter as much as we do. Affiliation with a community creates the coping systems, which are found in NGOs, social movements and advocacy groups. This level is expressed within industry through corporate social responsibility and advocacy group relationships. This level uses matrix organizations which, though highly inefficient, meet the needs of this level to offer participation in decision-making to all who might have a stake in the outcome.

Yellow, Authentic, Interdependent Me: The *Pharma 2029 Today* team was looking for this group. Other research has demonstrated that they are ten times more efficient and can manage more complexity than all the levels below them combined. Unlike previous stages (which believe that they, and only they, are “right” in their view), this stage knows that all of the previous stages are “right” depending on the circumstances. The prime directive here is to integrate all the wisdom of the previous stages and apply it appropriately.

This level understands that uncertainty and change are part of being alive. It does not fear chaos. Rather it is driven to negotiate chaotic waters and integrate systems. Its goal is to sustain collective survival while maintaining personal autonomy. This flexible freedom and flow create the coping systems that are found in niches near tipping points. This level appears in pharmaceutical companies where certain individuals are held in high esteem, even when they are not fully understood by those around them. It is also found in effective executives leaving companies to free themselves of constraints so they can work more productively from the outside.

STUDY METHODOLOGY

In 2007 we created a survey using five questions that recognize levels of pharma strategic thinking to test the Evolutionary Spiral Model. These questions matched the model with strategic *responses* to a set of industry challenges, specifically the pipeline and business model. Survey participants were offered a selection of responses—some less and some more complex. Participants were also invited to provide comments and many of those who did were later interviewed in depth.

Some responses were also constructed with “stimulus words” that have been demonstrated through other research to be attractive to and reflective of the levels in the Evolutionary Spiral Model.⁴ Specifically:⁵

- Blue, Conformist, Righteous We: *Safety, Submit, Order, Obey, Security*
- Orange, Achievement, Competitive Me: *Power, Action, Useful, Practical, Risk*
- Green, Affiliative, Holistic Us: *Social, Adjust, Fashion, Together, Team*
- Yellow, Authentic, Interdependent Me: *Esteem, Being, Express, Free, Indulge*

In all, over 150 executives responded to the survey. This, an admittedly biased sample,⁶ included mainly those in senior positions responsible for strategy. The respondents were drawn from:

- Large pharmaceutical companies—8 of the top 10 companies⁷
- Generic drug manufacturers
- Diagnostic and device companies
- Pharma market research companies
- Consultancies & Law Firms
- Regulatory Agency
- Academic, Non-Profits, Patient & Provider Organizations

Additionally, we conducted telephone interviews with eight selected participants from different companies and stakeholder groups, probing their thinking through a series of discussions and email exchanges that revealed *why* they were drawn to specific responses. The make-up of the *Pharma 2029 Today* team allowed for an interdisciplinary interpretation of the study.

After conducting the study, the team presented the results, along with the Evolutionary Spiral model, to two groups of industry executives. Each group included study participants and non-participants, enabling us to discuss the implications with a highly engaged and challenging group of thoughtful leaders.

RESULTS SUMMARY

We did, in fact, identify a capacity to thrive in the complexity of today’s environment. This capability is described in the Evolutionary Spiral model as *authentic*-level development. The most complex strategies offered by the survey to stimulate this level drew by far the largest percentage of responses. The distribution of responses shows the strength pharma has for addressing an increasingly complex environment:

- 46% *Yellow, Authentic, Interdependent Me*
- 28% *Green, Affiliative, Holistic Us*
- 25% *Orange, Achievement, Competitive Me*
- ≈1% *Blue, Conformist, Righteous We*

As we anticipated, more senior executives seek complex solutions to key industry problems rather than simple answers addressing only parts of problems without recognizing all the dimensions. We found that while many industry observers may be predicting the demise of industry, a substantial number of respondents were able to “see a way through” the chaos of today’s climate.

They know the challenges they face. They understand the nature of competition, see the need for collaboration and can integrate both into a seamless whole. Further, since they have reached the *authentic* level of development, they see the widest array of solutions to core industry problems and are

capable of selecting the right solution for the particular challenge they face. That is very good news, indeed.

WHAT DOES THIS MEAN FOR INDUSTRY?

This was a pilot study to test industry executive's strategic thinking. It was also a test of the model. We think both passed.

We set out to see if pharma executives are capable of functioning at the *authentic* level, knowing they would be most likely to lead industry from that level through the current complexity of changing global markets. They are.

We set out to learn whether the historic competitive strength pharma has shown at the *achievement* level is balanced by collaborative competence at the *affiliative* level. We did.

We also set out to see if the model might resonate with executives in ways that would help them better, more efficiently and effectively manage themselves, people and tasks in their work. It did.

We set out to see if the model will help them better understand regulators, customers, payers and competitors. It did that as well.

As a result, we see areas where the Evolutionary Spiral Model can help improve efficiency and productivity.

The Leadership Challenge. While we were encouraged by the relatively large numbers of people functioning at the authentic level of development in our sample, we were dismayed to learn that they feel lonely and unsupported within their companies. Some are even viewed as outcasts. Many are contemplating leaving their companies to work from outside. This presents a human resources challenge for industry. Can it afford to lose its best? If those most likely to help manage today's chaos leave, how can their companies assure that their skills and insights are not lost? How can supportive systems, structures and opportunities be put in place so that the creativity and problem solving of this group is harnessed? How can pharma support its executives who work at the levels prior to the authentic level, so that they can develop to address the full complexity of the challenges that the industry faces?

Discovery Innovation. We were encouraged to find that our respondents were capable of seeing not only the scientific and technical challenges of discovery, but those that are cultural and political as well. They are undaunted by difficult current realities.⁸ Are they capable, however, of communicating what they see to others? Can they extend beyond the traditional pharma boundaries to bring in new scientific approaches and tools? Do they have the authority within their companies to initiate pilot projects that demonstrate the effectiveness of their approaches? Will resistance based upon old worldviews and paradigms block newer scientific ideas? Are institutional allegiances and personal ambitions strong enough to maintain power over interdisciplinary science working through networks?

Development Innovation. We were encouraged to find that our respondents see the reasons why drug development has been difficult to innovate: cultures that fear risk seek safety in conformity. They see the inertia that fails to hire Bayesian statisticians or "gets stuck" in the "old ways" even when they are no longer productive. Will they, however, be able to "break down" the development silos that prevent innovation? How can their insights help companies to deal with payers and academics who can integrate large data bases and draw conclusions about drugs? Will they be empowered to forge the public-private sector partnerships that appear to be

emerging through groups like the C-Path Institute and the Institute of Medicine? Can they create new research techniques that take advantage of computerized medical records, biomonitors and biomarkers to personalize studies? Will innovative study designs work for a wider array of products and services to prevent as well as treat disease? Will industry lead the way, or simply respond to others who innovate from the outside?

Regulatory Innovation. We found compelling evidence that the competitive mindset that seeks simply to overcome the resistance of public health officials for approvals is giving way to a more collaborative approach. The collaboration will need to work with regulators, who must open toward the *Orange, Achievement, Competitive Me* mindset from a culture shaped historically by *Blue, Conformist, Righteous We*.⁹ The science of translational medicine is opening to new methods that industry and regulatory agencies alike need to pioneer. Old regulations may serve in many, but not all instances. Resistance to new regulatory approaches can be just as strong in companies as in government agencies. Will companies recognize how their own regulatory affairs subcultures can be opened for greater regulatory innovation? Will companies be able to blend the competitive need for immediate approvals with the collaborative approach for new regulatory models? Can industry create trust with key stakeholders so that negotiations proceed in good faith? Will pharma be able to adjust to new regulations aiming to control the economic and political power of industry by making comparative efficacy and cost benefit measures a higher hurdle regulated by a new agency?

Business Model Innovation. One senior vice president noted that not only did industry need to re-think its model but “...a fundamental re-think of healthcare is needed.” In our sample, many people agreed and felt that industry needed to engage in that the debate and alter its business model accordingly, rather than to be simply a passive reactor to the future. *Authentic* individuals in our sample are undaunted by that challenge and see it as an opportunity. They are optimistic that industry can add value in the debates. Will others within their companies agree? Can the *Affiliative* abilities within pharma grow without compromising the *Achievement* level competence? Can companies develop peripheral business models for new products and services fast enough while sustaining a conventional core offer long enough to satisfy investors? Will *Authentic* leaders be allowed the flexibility to try to get the best from all levels to grow the pharma endeavor? Will they have the skills to engage with the wide variety of global stakeholders involved?

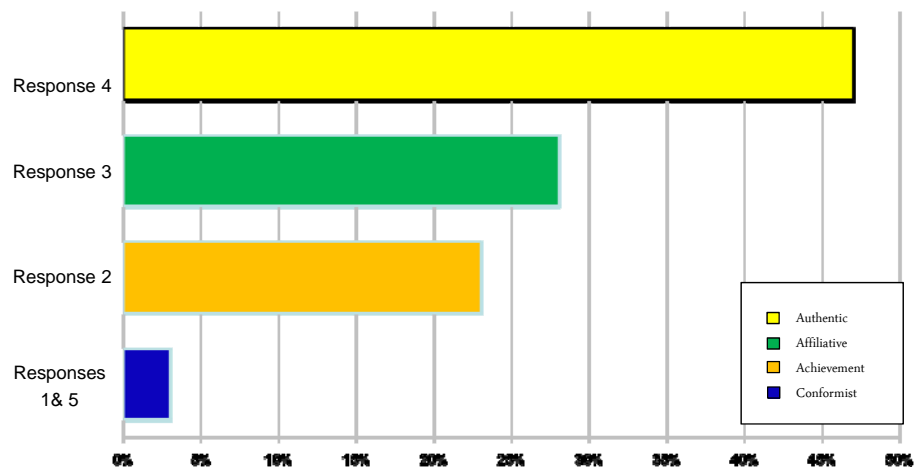
RESULTS FROM SURVEY QUESTIONS

Question 1: Solutions to the Drug Discovery Problem

Drug discovery can best solve biology's mysteries to fill pipelines by:

1. Learning from scientific authorities how to increase the efficiency of established scientific methods.
2. Competing for the best academic breakthroughs in molecular and cellular biology, letting biotech companies and their investors take the large risks, with pharma then funding development and marketing.
3. Collaborating over the big science problems together across the industry with government and academe to fashion the genome and proteome into a wealth of new targets for drug discovery.
4. Being free to cross all of the boundaries that define today's silos with new suites of tools in "open source" environments that link scientists from different disciplines, sectors, geographies and organizations.
5. Submit industry scientists to the tried and true methods that used to work before the craze for industrializing scientific research led to today's problematic pipelines.

Drug Discovery Responses



The largest percentage (46%) selected the most complex option. This selection speaks to the *authentic* level, which sees how open source discovery can move knowledge across disciplines faster than hierarchies or independent entrepreneurs. These leaders see open source may be an intriguing way to outperform "science in silos." They see the potential for linking scientists and integrating new suites of tools (nanotechnology, molecular imaging, and RNA Interference) coming from many different disciplines.¹⁰

The second most popular response (28%) was the *collaborative* option preferred at the *affiliative* level, and this also makes sense. The cost of large-scale research (e.g., the genome and proteome projects) combined with "big science" risks makes pooled resources a smart strategy.

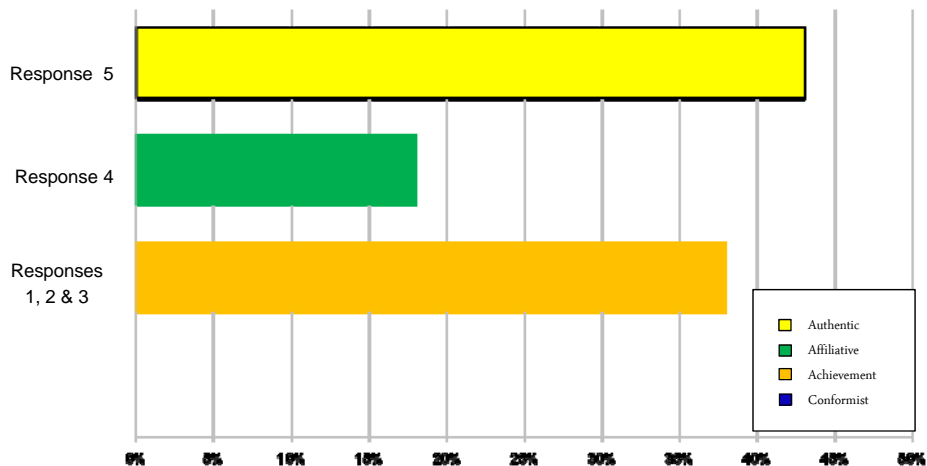
Fewer selected the *competitive* response (23%) of the *achievement* level. While competition, established authorities, and longstanding methods will continue to be important for discovery, conditions have changed too much to rely just on these strategies anymore. Competition is not working well enough today for pharma, and the survey majority knows it. Despite the fact that the survey also offered two responses attractive to the *conformist* level, only a few (<1%) participants selected those strategies.

Question 2: Solutions to the Drug Development Problem

Drug development can best deliver new therapeutics into markets over the next decade by:

1. Improving efficiency to test more compounds faster by adding technologies such as electronic medical records, biomonitors and web-based patient recruitment tools.
2. Expanding clinical trial designs to include adaptive trials with Bayesian statistics while experimenting with fundamental method changes that can work with biomarkers and diagnostics for targeted patient populations.
3. Incorporating 24x7 biomonitoring, large-scale exploratory INDs with rapid Phase I microdose studies moving directly to Phase III trials that support extensive Phase IV safety studies.
4. Redesigning the development cycle to enable clinicians and the FDA to fully integrate experimental science with the practice of medicine through reimbursement for trials and tests that enable a shift toward personalized medicine which accounts for the genetic, proteomic and phenotypic differences shaping healthcare outcomes
5. Encouraging a multiplicity of study designs that are matched to the different types of compounds and their intended uses so that preventive medicines, targeted drugs and blockbusters are addressed most effectively with different forms of clinical trials.

Drug Development Responses



Once again, the largest percentage of participants (44%) selected the most complex option. This reflects the *authentic* level, which sees how different forms of clinical trials might be required to match trial designs to different types or combinations of compounds by “experimenting with fundamental method changes.”

A much smaller percentage (18%) selected the *affiliative* level strategy for “redesigning the development cycle.” This strategy demands a high level of collaboration between pharma, clinicians, the FDA and payers. What would it take to make this happen? More trust than pharma now owns and an ongoing forum committed to build a new translational research infrastructure that can transform medicine. This is not too big an idea for those who prefer the *authentic* level strategy, but they pragmatically recognized these are early days for this *affiliative* strategy.

Companies can implement three competitive drug development strategies right now that are aimed at the *achievement* level. Combined, these three responses drew the second highest percentage of responses (38%). If drug development were a product rather than a process, these *achievement* strategies would all be line extensions. Important? Yes. They add needed capabilities such as electronic medical records, biomonitors and Bayesian statistics. To be competitive companies have to add capabilities that may be resisted by their inherently conservative and risk adverse development cultures, which are often dominated by the *Blue, Conformist, Righteous We* level thinking. These three strategies are good, but not good enough for the majority in the survey.

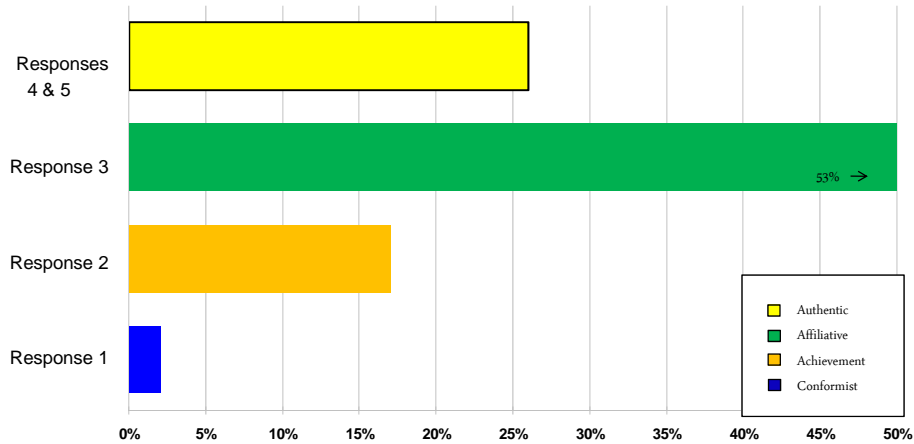
The survey did not propose any development strategies to appeal to the *conformist* level. However, our interviews and discussions make clear that the development process in pharma has a strong *Blue, Conformist, Righteous We* center that needs to be opened for innovation.

Question 3: Solutions to the Drug Regulation Problem

Regulation of pharmaceuticals in the future will be better if:

1. Companies submit all safety and efficacy data and obey orders from public health authorities whose primary mission is to protect the public.
2. Action is taken to strengthen the really useful regulations that are needed for practical scientific solutions based on reasonable risks and get rid of others that take time but offer little benefit.
3. Companies and regulatory agencies team together to adjust rigid rules and fashion a new translational science that can work globally to support innovation for public health.
4. Free and transparent exchanges raise the level of public esteem for translational science so that support for global systems of data collection fosters rapid advances that improve healthcare.
5. Open source reviews are conducted by global networks of scientists working much like those who created the Wikipedia for faster, better and continual checks on safety and comparative efficacy.

Regulation Responses



What forms of regulation will work best for 21st century products in a world growing more transparent by the day? Simple, concrete, specific answers to this question are simply inadequate. *Authentic* level thinking demands more open ended strategies that go beyond those of the most advanced regulators working on *The Critical Path*.¹¹ Two regulatory responses appealed to the *authentic* level. The strategy that offered two *Yellow* stimulus words tied to global systems was far more popular than the regulatory strategy based upon the Wikipedia, which has shown it can organize more knowledge faster than ever before. When these two *Yellow, Authentic, Interdependent Me* responses are combined they account for a sizable minority (27%) of survey responses.

However, the majority (54%) of survey participants see the best answer as the *affiliative* level strategy, which incorporated four of the five *affiliative* stimulus words. It makes sense that a higher level of public and private cooperation will be a strategic necessity for solving regulatory problems. The linkage between innovation and public health is particularly critical as we head toward a period of healthcare reform.

Few participants selected the *achievement* or the *conformist* responses, which confirms the need for higher level regulatory strategies. While competition, established authorities, and longstanding methods will continue to be important for regulation, conditions have changed too much to rely on these strategies alone.

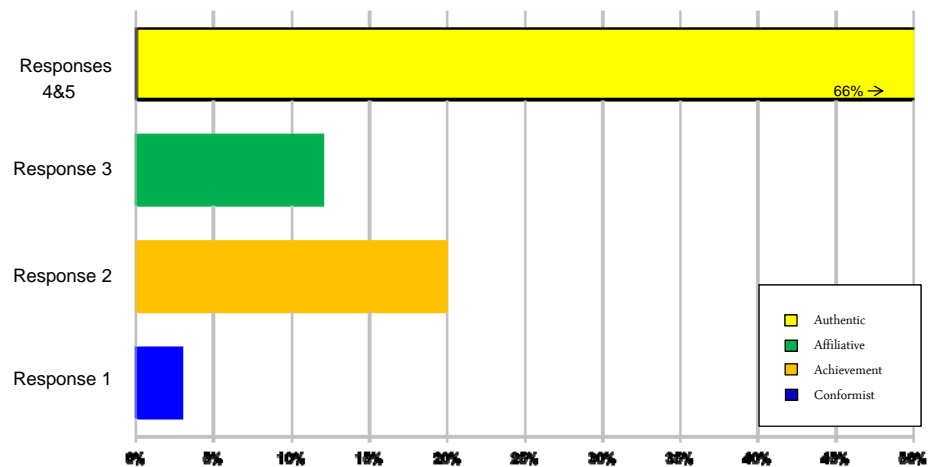
Question 4: Solutions to the Pharma Business Model

The Pharma business model will succeed in the future as long as:

1. Pharma leaders create security for investors and companies; obey the dictates of markets, which reward those companies that submit to an ordered approach in science and business.
2. Companies have the market power to take action and develop more useful innovations that offer prevention, lower the risk of therapeutic failure and provide practical solutions for major healthcare problems.

3. The industry accounts for social needs and adjusts its business practices to more effectively work together with governments and NGOs to address global needs such as the inequities and disparities of the poor.
4. The industry integrates a larger health offering with sustainable pricing models for a wider array of products and services, including generics, diagnostics, disease management, prevention and knowledge management.
5. Public esteem for pharma builds so that investors indulge industry with the capital needed for being innovative, and that means companies being free of ethical taint as they profitably improve health using interdependent global systems.

Business Model Responses



Those pharma leaders who once mastered getting a cookie from Mom and then the car keys from Dad now have a bigger challenge--getting payments from healthcare budgets to support ongoing innovation. Purchasers can now gather information to controls costs, and they can make value propositions transparent. How then does pharma take advantage of its scientific expertise to sustain its business? The answer will be complex in order to meet the diverse needs of a global population in various changing healthcare systems.

So it is heartening that the largest percentage (66%) of participants selected the most complex options as the way forward for pharma business models. Two responses reflect the *authentic* level—the more popular one offering integrated products and services with sustainable pricing models, and the other containing all the stimulus words for this level. The many *authentic* level responses signal that many industry leaders do comprehend the requirements for meeting 21st century business challenges.

Lower levels of development will have difficulty seeing a way through the chaos, but those at the *authentic* levels will align readily with the ethical and political forces that reframe the current anti-pharma climate. Like the competitive types, they understand the business imperative for profit, and like the affiliative types they value the role of NGOs. They recognize, however, that neither governments nor NGOs can address the larger 21st Century problems without business.

Only a few participants (12%) selected the *affiliative* level strategy to address disparities and the needs of the poor. We were not surprised since business interests are often held distinct from social interests, especially in America, though public opinion indicates that the ethical, political and economic expectations are changing for business, particularly for pharma.¹²

The far more popular (20%) *achievement* level strategy contained all of the stimulus words for this level while focusing on innovation in prevention. As with questions about the other industry challenges, the strategy offered for the *conformist* level had few takers.

CONCLUSION

The pressure cooker of global healthcare will mean pharma strategies must work through tipping points at which chaos converts to increased prosperity. Pharma has the potential to thrive, but it may be hidden away in the upper reaches of the Evolutionary Spiral. We can see this potential in the many responses of senior executives selecting the more complex solutions in our survey rather than the simpler answers that can only address parts of problems.

The survey and this study only begin to explore this hidden capacity to address complexity, but as a first test of the Evolutionary Spiral model we see positive results. The tendency is clearly to move up the spiral, with *authentic* level responses scoring highest, then *affiliative* level above the *achievement* level that has been the central strength of pharma. This strength and its base in *Blue, Conformist, Righteous We* can be sustained and developed further by tapping more fully into the *Yellow, Authentic, Interdependent Me* level that our study affirms is available in pharma.

The *Pharma 2029 Team* will continue to explore the possibility that tapping into the higher levels of the Evolutionary Spiral can help pharma face the fundamental re-think of healthcare that represents a tipping point for pharma. We know this model already helped South Africa make the transition from Apartheid.¹³ We know the model illuminated strategies to combat the epidemics of obesity and diabetes.¹⁴ And we know the model can help pharma develop strategy for the problems companies face.

Our interviews and meetings have also shown that the Evolutionary Spiral reveals a potentially dangerous problem for pharma. The great potential at the *authentic* level for pharma may be undermined as people capable of working at this level feel isolated, unsupported and in some cases, ready to leave. Corporate cultures that are under the greatest stress may be particularly vulnerable to the loss of those most able to fix complex problems.

Against this concern we see a bright opportunity to bring together pharma leaders capable of solving the most complex problems in the pipeline, business and other critical areas for pharma. We invite those who want to know how to use the model in this or other ways to contact members of the *Pharma 2029 Team*.

ENDNOTES

¹ Albert Einstein quotation found at: http://www.thinkexist.com/English/Topic/x/Topic_285_1.htm.

² Don Edward Beck, *Spiral Dynamics Integral*, Spiral Dynamics Group, 2006; Beck and Cowan, *Spiral Dynamics*, 1996; Susann Cook-Greuter, *Postautonomous Ego Development: A Study of Its Nature and Measurement*, 1999; Susann Cook-Greuter, "Ego Development: Nine Levels of Increasing Embrace", Cook-Greuter & Associates, 2002; Clare W. Graves, *The Never Ending Quest*, edited by Christopher C. Cowan & Natasha Todorovic 2005; Robert Kegan, *The Evolving Self--Problem and Process in Human Development* 1982; Robert Kegan, *In Over Our Heads--The Mental Demands of Modern Life*, 1994; Jenny Wade, *Changes of Mind—A Holonomic Theory of Consciousness*, 1996; Ken Wilber, *A Brief History of Everything*, 2000.

³ IBID.

⁴ Clare Graves identified as ways to stimulate "the dominant thinking."

⁵ Op. Cit. Clare Graves (2005), p.466.

⁶ We viewed this as a pilot test of our Evolutionary Spiral Model application to industry's dilemma. There was no attempt in this study to create information that was representative of the industry overall, nor did our method allow for inter- or intra-company comparisons.

⁷ The largest percentage of responses came from 20 research-based pharmaceutical and biotechnology companies.

⁸ PriceWaterhouseCoopers, "Pharma 2020: The Vision," 2007, <http://www.pwc.com/extweb/pwcpublications.nsf/docid/91BF330647FFA402852572F2005ECC22>.

⁹ Hiltz, Philip, *Protecting America's Health—The FDA, Business, and One Hundred Years of Regulation*, Random House, 2003.

¹⁰ Institute for Alternative Futures, *The 2029 Project: Achieving An Ethical Future for Biomedical R&D*, 2005, <http://www.altfutures.com/2029.asp>.

¹¹ See <http://www.fda.gov/oc/initiatives/criticalpath/>, and also http://www.fda.gov/oc/initiatives/criticalpath/reports/opp_report.pdf.

¹² Daniel Yankelovitch Interview, *The McKinsey Quarterly* (Number 2, 2007).

¹³ See Don Beck, *The Crucible—Forging South Africa's Future*, <http://www.thecruciblebook.com/>.

¹⁴ Institute for Alternative Futures, "Diabetes and Obesity 2025," http://www.altfutures.com/foresight/Diabetes_Scenarios_June_1st.pdf.