Architecting Change: Building Acceptance of New Solutions in Emerging Markets

Richard R. Smith and Ting Wang

***Abstract*—** The advent of new solutions in the agricultural, ecological, and medical fields has created excitement in each of these broad research interest areas around the world. Yet, when the potential beneficiaries of these solutions are in emerging markets, the solutions can often fail to reach these targets. Drawing on experience and research in the medical/ pharmaceutical, agriculture, and other industries the authors share insights on the importance and nature of architecting and managing change. Too often, external factors such as bureaucratic regulatory challenges, local business threats/ perceptions, inadequate media relations, and channel pathway incoherence can get in the way of the success of breakthrough thinking and new solutions. Using examples from experience, a strong case for proactively architecting change with new solutions will help society as well as the funding for future research. More research and applied practice must be done to both understand this critical dynamic as well as advance the impact of scientific discovery.

***Keywords*—**Managing Change, Emerging Markets, New Solution Introduction

I. Introduction

As science is oriented in the spirit of exploration, discovery, and new solutions, we are sometimes surprised when the acceptance or adaptation of new methods is either slow or blocked by stakeholder groups. Managing resistance to change is not new and is often considered in many corporate programs and projects, yet is often not fully considered in the scientific process of new solution development.

In the field of information technology, solution developers have become more aware of the critical nature of stakeholder buy-in prior to the launch of new solutions [1]. This integrative solution development approach includes a strong focus on managing stakeholders, developing a change brand, creating stakeholder perceptions, managing communications, providing training, and other such change activities. As a result, the field of information technology has been able to not only make solutions more effective, but also speed the time to implementation.

Similar patters are emerging in the pharmaceutical industry as the process of drug discovery and speed to market has come under scrutiny in recent years [2]. Today many of the leading pharmaceutical companies are working much more closely with stakeholders to gain approvals and acceptance while products are still in development. While this trend of proactively managing change at a time when the speed of change is ever-increasing has been effective in many developed nations in the west, this has not been the case in many developing nations.

We need only look at the situation with the vaccine for polio and the massive resistance in countries such as Kenya, Nigeria, and Pakistan to see how the resistance to change has been poorly managed. This social resistance has been the subject of much debate amongst social scientists, political economists, and the medical community [3]. While some may dismiss this situation as a politically charged and religious stand, the result of this resistance is preventing the eradication of polio in these countries. This is notably ironic after the great success with the polio vaccine across all of India.

This type of resistance to scientific solutions can also be found in the field of agriculture as the consumer backlash against genetically modified crops continues to limit the progress in providing adequate food around the world [4]. Here again the stakeholders of the systems in agriculture and food are resisting change without adequate knowledge in some cases. This has been evidenced in Latin America, Eastern Europe and parts of Asia.

To avoid these situations and advance the impact of scientific solutions, we must learn to manage the introduction of new solutions more holistically. In this paper we explore potential ideas for considering change in the context of new solution development with a focus on emerging markets.

II. Concept of Change Management

Managing change has been one of the topics of much debate in the field of psychology as researchers seek to not only understand the resistance to changes but also how to best manage the change process in organizations and society. Several stages of managing change have emerged by examining individual, organizational, and societal behavior over time. This has been borne out particularly in the medical field where self-management of change solutions is required for implementation [5]. The following stages of change are adapted from behavioral science [6] and show the natural progression over time and the critical role of science in garnering acceptance while managing resistance to new solutions.

A. Awareness of Change

When individuals become aware of a new solution or a

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pending change to process, there may be confusion and misunderstanding. People often do not have a clear understanding of the scope, nature, depth, implications, or even the basic intent of the solution. This was certainly true when Monsanto introduced the agricultural products "Roundup Ready" into the marketplace in North America [7]. While their new solution was a breakthrough in science, the acceptance was low as the information on the solution was not clear. It is imperative that scientists begin to think not only about the solution, but also about the stakeholders and the communication even at this early stage of introduction.

B. Understanding of Change

To move stakeholders beyond awareness to a stage of understanding requires a level of information sharing, communication, and perhaps education. The information about the scientific solution must be in the language that is understandable to the target audience and positioned in a way that can be easily digested over time.

Most importantly, achieving a clear understanding of the solution must involve an opportunity for the stakeholders to interact with others to pose questions, challenges, seek additional information and make inferences in an effort to clarify their understanding and avoid confusion. While many scientific organizations are focused on the regulatory stakeholders (food and drug administrative bodies and the like), too often other stakeholder groups (agricultural authorities, ecological NGOs, and state administration) may not have the opportunity to clearly understand the new solution. By enlisting the help of NGOs, medical solutions are finding more opportunities to make an impact in developing nations [8] as we see with the leukemia societies and medical community in Indonesia.

C. Adoption of Change

With understanding of the solution, many times the adoption of the new technology, process, or application will follow, however this may not be the case when stakeholder groups have different agendas or issues. During this stage of change, it is important to allow groups and individuals to experience the new solution and discover the benefits in a way that is culturally accepted.

This can also be the case when managing solution challenges and difficulties. Johnson & Johnson discovered this in the Tylenol product recall as they quickly worked to manage stakeholders to eventually recover the impact to their solution in the marketplace [9]. When the DuPont company faced challenges with their agricultural solution, Benlate, they were unable to manage stakeholders in a way that could avoid the adverse impact on both the company and the product solution [10]. Managing the adoption the solution and the potential changes along the way can be critical for success of the solution.

D. Societal Ownership of Change

As the name of this stage of change suggests, it reflects that point that society accepts and internalizes the change as a pattern of work and life. In other words, it becomes the new status quo for a solution in the field. While there may be various stages of acceptance at this level, it is the compliance and ownership in society for the proliferation of a solution. We recently witnessed this in India with the quest to eradicate polo from society.

Other types of solutions may be more complex and require systematic work over time. We can see this currently as world food experts work to improve the yield of rice and wheat crops and engage in global debates on the use of sulfonylurea herbicides in emerging markets [11]. This and other solutions are not only complex in the science, but also in the far-reaching effects on ecological, environmental, and health in societies.

III. Application for Science

It would be naive to suggest a simple approach or uniform manner for managing change associated with solutions across scientific fields. The complexity of solutions and the various interests of stakeholders can quickly impede any progress in moving forward [12]. We might therefore offer a few principles that may be worth further exploration in the intersection of science solutions and societal behavior.

A. Develop a Change Architecture

The overall architecture for bringing about change might include the focus on value achieved, management of the solution (governance), navigation of the development program, and the identity of the solution.

B. Manage Stakeholders and Messages

While this can be a complex undertaking, it has been shown that organizations that closely manage their stakeholders are more likely to achieve their desired outcomes.

C. Create a Change Team

By having a clear group of change agents and sponsors, the ability to manage change becomes clearer as the stakeholder communication is enabled in a way to gain important feedback while also creating momentum for the new solution. This can also involve cross-sector alliances to enhance the collaboration and impact of the efforts.

D. Define a Vision and Purpose

While some may not feel comfortable with the idea of a vision for a solution as the process of application and adaptation can take time in each market, this idea of helping others see the potential provides a way to further the concepts and impact more quickly.

E. Addressing the Human Interface

The complexity of society and human interest cannot be completely understood or managed, yet the need to address the basic interface issues such as language, knowledge, skills, and abilities can be critical in gaining acceptance of solutions. This is particularly true for emerging markets.

IV. The Case of Emerging Markets

As we witness the increase in the globalization of every industry sector, the reach and impact of solutions begins to

create new challenges and opportunities in many emerging markets. Many such markets had been closed to outside influences for many years and unfamiliar with the management and interaction with foreign solution providers. As many global and regional organizations have learned, the careful management of stakeholders in these locations becomes a clear priority in gaining acceptance of scientific advances.

In many cases, finding an opportunity to even allow the new solutions into the market become a challenge due to regulatory issues. Yet, organizations such as the Indonesia Medical Outreach group has been able to connect with local people in many locations throughout the country to help find ways to introduce medical solutions and basic care that would have otherwise been blocked or stuck in a system of red tape.

Additional cross-sector collaboration examples show that the power of these alliances can find ways to create not only powerful ways to market, but also strong acceptance of solutions in emerging markets [13]. While there is much on this topic that is beyond the scope of this paper, these new collaboration models can be an important mechanisms for managing stakeholders and affecting positive change with scientific solutions.

V. Conjectures for the Future

Projections of the population growth of our planet are staggering as experts estimate that we will see a planet of 9-10 billion people this century [14]. Yet, our ability to provide the agricultural, medical, and ecological solution set to sustain our planet remains unknown. While scientists press on with discovery and research, we must find new ways of pushing towards the appropriate adaptation and acceptance of new solutions that will benefit our society [15]. Recent studies show that as a society we are often taking short-term actions or continuing traditional methods without the aid of science solutions to further our sustainability.

New breakthroughs in science will continue to improve our potential for the future, yet as we have seen from decades of advances in medicine and agriculture, much of the world is still developing and may still be resisting solutions that have been around for generations. Rather than relying on political and regulatory systems to help ensure the take-up of new solutions, scientists and their organizations could further their causes by taking steps to help manage the change process by architecting programs around their solutions. This step forward could help make the difference needed in our global advancement and interest in science, which could also help pave the way for improved funding of scientific research.

VI. Conclusion

The challenge of managing large-scale and societal change while also managing the development of new scientific solutions is not only complex, but also broad-reaching in nature. By taking a cross-disciplinary approach to the introduction of new advances in science, we may see an improved adoption and ownership of change around the world. This is especially true in emerging markets where particular attention must be given to the various stakeholder groups that may have an impact on the perception, communication, and acceptance of new advances in medical, agricultural, and ecological solutions. More work must be done in this area to determine the critical factors in each market based on type of solution and the impact on future adoption in emerging markets around the world.

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