Deploy or Adopt:
Success or Failure for Technology Insertion

Endeavor

Overview

It has been said that running a business is easy; all you have to do is buy some stuff, sell some stuff… and that's all there is to it… except for a few million details. It may also be said that inserting new technology is simple; all you have to do is buy/build some software and then implement it … and that's all there is to it, except for a few million details.

Tongue in cheek? Of course, but there is nothing tongue in cheek about inserting new digital energy technology into upstream assets … while production is running flat out. While much of the technology holds great promise, the difficulty in implementation is much more complex and difficult than ever imagined.

"Implementation" can be a Deadly Word

Why? Primarily it's that one "deadly" word which inevitably breeds widespread confusion: implementation. The truth is that there are two legitimate, but very different, ways of implementing, i.e., getting new technology into play – deployment and adoption. Each way requires unique actions and generates different reactions and results. Consequently, when people are not clear whether implementation means deploying or adopting a particular technology, be prepared for a technology insertion failure!

Consider how these pure, very different, very technical rollout strategies are defined. When management decides a technology will be good for the company and mandates that all units use it for business operations by a specific date, that's a "deployment" or taking an action requiring others to respond. Imagine the chief of operations of an airline saying to pilots that the new engine-start procedure is to be used for all engine starts beginning Monday morning at 0800 hours. That's a deployment.

In contrast, the second rollout strategy is "adoption." Management says, "Yes, that technology is valuable" but let's each business unit decide "if and when" it will voluntarily adopt it. Imagine the chief of operations of an airline saying to pilots that a new navigation aid is to be installed in all cockpits as a supplement to other aids. The chief then says, you guys can give it a try and see if it works for you. That's an adoption.

The oil patch is not an airline, and chiefs are not accustomed to being very explicit and precise in the way they talk about implementations of new technology. You might hear a top manager say about a new technology, "Looks good; let's go with it." That statement might be interpreted as either a deployment or an adoption. However, failure of top management to decide and clearly declare deployment or adoption defaults to the adoption strategy for implementation.

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Either Implementation Strategy Works, But…

Either strategy works so neither is superior. However, opting for technology osmosis through adoption can have a big business impact because of the time lag. By the way, "technology" is inclusive terminology for know-how expressed in tangible form: anything from drilling technology to back office information technology. **Figure 1** shows the relative speed of utilization for the two strategies, with adoption usually lagging months if not years behind target-date deployment.

With a deployment, we would expect almost all units to begin utilizing the new technology at the "go live" date, while for an adoption, we would expect very few units to get going early, with utilization building slowly over time … and with a final result of having a few units who never use the technology.
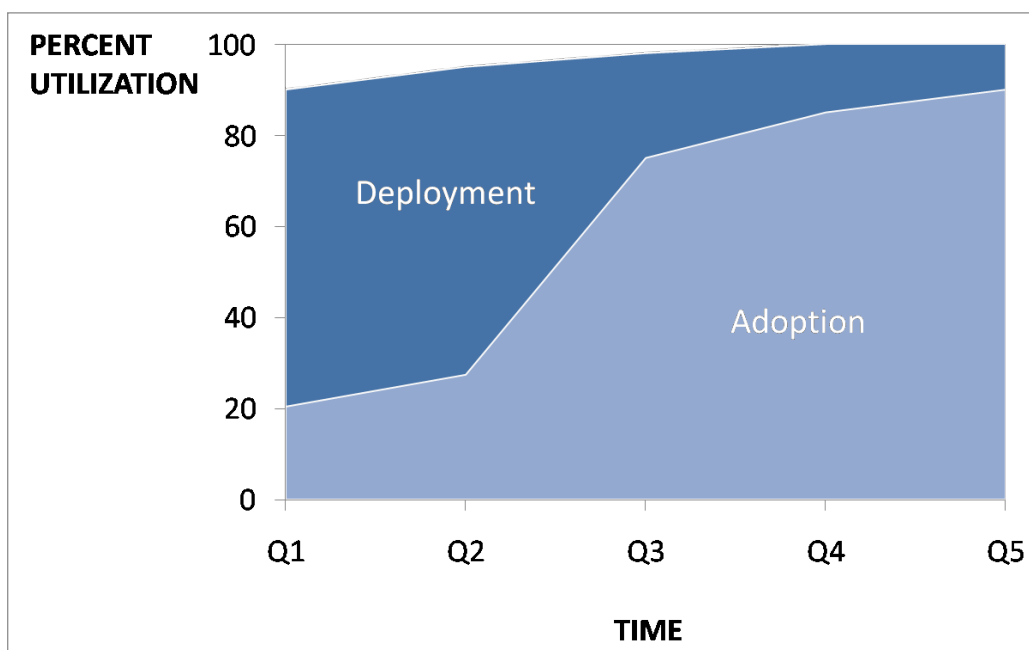
Figure 1 – Adoption usually lags months, if not years, behind target-date deployment.

Not only are utilization timelines vastly different, each insertion method has a unique action formula. If that formula is not followed, or if insertion actions are mixed, not only will the insertion not get accomplished but the organization may slide backward with inferior results and bad blood. Again, implementation's fatal flaw is the very fact that people are not on the same page with each other about whether a deployment or adoption is intended, instead putting into play a counterproductive bits and pieces "witches brew" rollout.

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Illustrative of a deployment is when an oil company puts a drilling package in all of its North Sea assets on a fixed schedule with expected compliance by all. Although deployment is not autocratic, it is definitely insistent and forceful -- every person's cooperation is expected internally and failure to cooperate will have clear performance evaluation consequences.

Distinctly apart from deployment, as noted previously, adoption is voluntary by the business unit. For example, an oil and gas company may distribute companywide "a new, more efficient decision-making application" and expect that some units will soon adopt the application and other units will follow. The message is that the application is not a requirement but an equal opportunity offer.

However, the adoption is not just put idly on the table. Instead, everyone is expected to become an adopter of these "better ways of doing business" on a sooner or later basis. Therefore, while not trumpeting any penalties, the statement is that non-adopters should not endanger the company's welfare by not participating because they will stand out like a sore thumb. It's the "good citizen" approach with lots of time flexibility.

In the midst of these technology insertion opportunities and problems is a profound change within the industry. Many companies have journeyed away from a single asset owner making all the management calls, instead moving toward treating individual assets in various parts of the world as business profit centers. So, top management may frequently see valid reasons for company-wide deployment but not express that conclusion explicitly to respect the business' unit's autonomy and not impose a blanket dictum, or deployment.

Using a Specific Implementation Formula

Either way, the technologist needs to understand what that decision is –deployment or adoption. In other words, it must be crystal clear that when management declares everyone should use the new technology now, it's a deployment. Not surprisingly, deployment mandates having a "take charge" person or executive in charge. Otherwise, nobody is running the show. In contrast, if management simply gives permission for using the technology, it's an adoption. The latter, more laidback approach, only requires a sponsor who's responsible or maybe even a backer.

All these factors bring the issue to the critical point: each type of technology insertion follows a unique formula, with a different set of required actions. Picking and choosing selectively will not work. If any parts of a formula are skipped, certain failure will result. (see the note on "formula" at the end of this paper.)

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For deployment, the formula consists of Action Steps utilized in engineering organizational change: communicating a clear vision about using the new technology, altering processes to mesh with the technology, modifying plant and tools, tailoring the performance management system and project management.

On the other side of the coin, the adoption formula consists of action steps from the decades-old field of "diffusion of innovation." These steps are: inform/share, convene, case study, demonstrate, answer/support and validate.

For all the optimism that technology insertion should embody, it is nevertheless important to recognize the impact of negative steps, too. In other words, wrongly-selected action steps undermine the technology insertion. These are referred to as negatives even though possibly appearing benign or even somewhat positive. Using even one wrongly-selected step can jeopardize any planned change and even cause outright failure. For example, if a technology is up for adoption, a substitution of the action of "persuading" for the action of "informing" will dramatically slow down the adoption!

Conclusion

Because the industry's future springs from new technology, effective formulas are needed to put that technology into place. When introducing new technology, either of two pure plays will work but implementation must involve a formulaic approach or desired results simply will not happen.

Therefore, the road to success begins with identifying the focus of the performance improvement opportunity. Then validate the technology for enabling delivery of the business opportunity. Next, determine executive intent and clarify "decision to deploy" or "permission to adopt." Finally, select the matching implementation strategy and take formula-driven actions, being certain to block out any negative actions.

In technology insertions, today's vital issue continues to be the confusion in technical and business communities about implementation or rollout strategies, with many technology advocates still using the "witches brew" approach to implementation. And that's where potential success sinks in quicksand. By unscrambling rollout strategies and sticking to proven formulas, technology insertions will meet or exceed the satisfaction of even the most ardent "implementation" critics.

About Endeavor

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