Mapping #4: From ad-hoc to strategic learning

Practice Paper

Chris Daniel
From ad-hoc to strategic learning

David Garvin, a Harvard Business School professor, said once: “Products can be copied, services can be copied, even processes can be copied. … But if you are learning more rapidly than your competition, you can get ahead and stay ahead.”

There is a wide array of publications covering organizational learning from different angles. Over the past 50 years, tremendous progress has been made in understanding how the human mind works; we now have books explaining in what situations we learn, and research that links company attitude to learning with overall business performance. We also have Knowledge Management Systems focused on storing and retrieving important pieces of knowledge.

In business, it is natural1 to assume that each business niche has an expiry date. As things change, we must adapt. Though this is a sometimes extremely painful process that causes significant losses, especially if we were slow to react, it seems safe to assume that all companies are on the constant lookout for new opportunities, even if the level of effort they put in to sensing and analyzing their environment varies a lot.

However, it is the message conveyed by the opening quote that adds a truly meaningful purpose to learning. It’s common for learning to be considered to be a perk, to keep employees engaged or a tool for reducing corporate risk (compliance learning). It’s rare that conscious learning is appreciated as not only a tool for gaining and sustaining competitive advantage – including where it does not already exist – but also as a general management tool that should be used more often.

There are two ways in which advantage can come from learning:

• **Speed** – early identification of problems and proposing solutions ahead of your competition are obvious benefits, and so are early discovered IP rights and signed IP deals. The benefits become even more significant if you manage to force your opponents into follower mode, where your competitors are trying to look like you.

• **Quality** – even if you are slower than your opponents, you are still the most experienced person in your environment. Most likely, you are exposed not only to the current market, but also to the forces shaping it, the structure of its components and their dependencies; these are unpredictable but you have a sense of them. Even your direct competitors are exposed to slightly different environments, and subtle differences affect whether a given decision is a good or bad one. The better you are at adding meaning to your observations, the better will be your final decisions.

This highlights an essential truth about organizational learning: simple knowledge-gathering is not enough. A high-quality learning process involves much more than that – for example, adding meaning to observations, building an adequate shared model2, anticipating changes and then using the model to determine future actions. In a high-quality learning process, even the learning itself is directional and focused on areas with the biggest potential.

---

1. Natural to assume, perhaps, but less natural to act upon. The concept of inertia makes such thinking difficult, as described in Mapping #2: Remaining Nimble… Despite Your Mass
2. See Michael Gray and Robert Wood, Mental Models, Decision Rules, and Performance Heterogeneity, Strategic Management Journal Vol. 32
Obstacles to learning

Unfortunately, learning has a number of traits that make it unattractive. First, it is a delayed gratification activity – it does not pay off immediately; there is a (sometimes very significant) time delay between effort and results. Moreover, individual learning efforts may not pay off at all.

Second, it is easy to get distracted and focus on the wrong thing. When your competitor jumps ahead, it is very tempting to start analyzing how it achieved its breakthrough instead of thinking what you should do next. You may or may not need to catch up, depending on the overall set of circumstances.

It is a bit of a chicken-and-egg problem. Not enough learning causes corporations to lag, so they start to focus on their immediate future, the ‘here and now’, and further reduce ‘unnecessary’ spending (including learning) to ‘restore market position and profitability’. From the management perspective, there is an ongoing, unsolvable conflict: short-term benefits can be achieved by cannibalizing the company’s future, but too much focus on the future jeopardizes current income. And while every manager has to balance these two conflicting narratives, without conscious learning there is a strong incentive to focus on short-term income and let others deal with the long-term strategy.

This penalizes learning, because learning can only happen if three conditions are met at the same time:

1. An observer experiences an event that does not fit his/her existing state of knowledge.
2. The observer pays attention to the event. It is critical that the event is not dismissed as something weird, exciting or even interesting, but not worth further investigation.
3. The observer has enough resources to try to understand what has happened and why, which may include some experimentation to confirm/reject alternative explanations.

Look at the story below, describing the invention of the microwave oven:

One day in 1945, Spencer was walking through a radar test room with a chocolate bar in his pocket; he came too close to a running magnetron tube and the candy began to melt.

Spencer was already known at the company for his curiosity and ingenuity, and he reacted true to form – he pointed the magnetron at kernels of corn and watched them pop, aimed for an egg and saw it cook so quickly it exploded. Soon, Raytheon officers were sampling microwaved meals in the executive dining room and within a few years the company was marketing the Radarange for $2,000 to $3,000.

Percy Spencer was not the first to notice the effect of the magnetron, but he was the first one to examine it. People with similar curiosity are not that rare, but people with similar curiosity unconstrained by their corporate environment hardly ever exist.

The key question is this: what would have happened if Spencer had had to focus only on building radar, because that was the primary business of Raytheon?

The OODA Loop

The gap between what Spencer knew about the environment (‘The bar should not melt spontaneously’) and the perceived state of the environment (‘The bar did melt’) prompted him to perform a series of experiments to understand that inconsistency. Note the association between the learning and the decision-making process: they are inseparable to the point that existing research calls them the Decision and Learning Cycle, because if no learning is needed, the decision is not important, and if no decision is needed, the learning is pointless.

“Without conscious learning there is a strong incentive to focus on short-term income and let others deal with the long-term strategy.”

One of the most famous and influential descriptions of the Decision and Learning Cycle is the OODA loop (Observe, Orient, Decide and Act), illustrated in Figure 1.

Observe, Decide and Act are relatively simple concepts and do not require explanation, but the Orient phase is different. This is where we take observations and add meaning to them based on everything we know and what we are. (Note this is also the place where we make the most significant mistakes.)

For example, imagine the following situation:

You run a network of restaurants, and for one of them, you hired a new supervisor. The revenue immediately declined. You have seen this pattern quite a few times, and it was a sign of a wrong hire.

The revenue decline is an observation – something you have seen, known or learned. Observations cannot be disputed, as they are facts, and they should be consistent for any involved party. But the conclusion that the new supervisor is a wrong hire is an orientation – a meaning that has been added to observations based on your previous experiences, culture, heritage and maybe some rational analysis. It may or may not be right, depending on the quality of your thinking. In this case, the orientation is wrong because the problem was in fact caused by nearby roadworks, but figuring that out requires conscious effort (and time, and money) to investigate it.

It is not difficult to understand that the biggest problem here is (the lack of) our time and attention. Rational thinking is expensive in terms of the resources it needs. Testing multiple hypotheses requires intensive work, so our mind defaults to the most available, most recent and most plausible solution, and sometimes even replaces a difficult challenge with a simpler one (as long as it looks plausible enough)4.

In times of high operational stress, the Orient phase effort gets further reduced. In order to make more decisions, we sacrifice their quality (Figure 2).

---

This atrophy of the Orient phase is even more significant because we not only make more mistakes because of insufficient analysis, but we also limit our learning capabilities. The Orient phase is where learning happens; specifically, it is where the double learning loop shown in Figure 3 resides⁵, which means we are highly unlikely to revise our mental models if we have to rush.

![Figure 3 – The double learning loop – if something goes in an unexpected direction, trigger the mental model check. However, there is no time for mental model checks if you are pressed for time](Image By Xjent03)

Naturally, the world is not black and white. The orientation phase for each decision can be expensive, but when mental models need to be updated too, the cost skyrockets, as updating one set of models creates gaps and contradictions in others. Restructuring mental models is not a one-time effort, but a continuous iterative process that moves us towards a new, more useful state. And there are situations where learning is not advisable: if our understanding of a situation is poor and it would take time to understand it better, we may have to act first and draw conclusions later.

All of this tells us that too much focus on the here-and-now, and on short-term profits, is a soft way of prohibiting learning.

### Focus on being busy prohibits informal learning.

Few companies decide to employ a more formal system, and for a good reason. It’s probably true that properly catalogued knowledge will help a decision maker to make good decisions, but the cost that participants have to pay (for example, simply in writing down their observations and analyses) puts them off formal systems and makes them simply too expensive. Philip Tompkins, in his book Apollo, Challenger, Columbia: The Decline of the Space Program, wrote:

We saw ... two antagonistic cultures ... the managerial/bureaucratic subculture and the weakened engineering/concertive one. We watched a reversal of status, as the engineers became second-class members, forced to communicate through the formal channels, intimidated by the managers. The informal system of communication could no longer save the formal system.

This is one of the most important observations about enabling learning: the effort becomes futile as soon as participants deem it is an unnecessary checkbox to tick.

You cannot learn everything all by yourself. You cannot force people to learn.

---

⁵ Frans Osinga, Science, Strategy and War: The Strategic Theory of John Boyd, 2005 (p.271)
The only thing you can do to foster organizational learning is to provide employees with the necessary resources and a reasonable learning environment, which includes fairly complete information about the company environment and situation, a sense of direction, and connections to people who may have a similar interest in the field.

In other words, learning is a cultural thing.

The culture of learning

The first and foremost step in establishing the culture of learning is recognizing that you cannot do it all alone, since no individual has sufficient mental capabilities to process all the observations flowing in to your company. Delegation is a common approach to increasing productivity, and also works for learning – you want your employees to learn on your behalf, and to make the best possible decisions, as though you were watching them all the time.

Unfortunately, this is easier said than done.

As the complexity of a system increases, the accuracy of a single agent’s own model of that system decreases rapidly. – D.D. Woods

The bigger the company, the less consistent the knowledge dispersed amongst individuals within it. While it is possible to get a reasonable understanding of a start-up environment with only a few employees, such a thing is nearly impossible to achieve in bigger organizations, and as a result the quality of decisions deteriorates.

Employees are not at fault here. They are trying their best, yet each of them is only exposed to a fraction of the overall company environment, and without an effective form of communication their mental models get out of sync. And that means that delegation of learning and decision-making will not work until you start nurturing knowledge exchange by connecting the right people and giving them proper communication tools. Also, if individual employees are expected to make decisions for the benefit of the company, they have to be able to estimate the impact of their actions on the company.

To return to our earlier restaurant network example (page 3), the ‘floor’ employees (those who face customers directly) probably knew about the roadworks in the outside environment, either by overhearing customers talking or because of local gossip. But they had no context for that information, and since they could not determine how important the roadworks might be for the business, they chose not to act on it, and the new manager was blamed. While this story may appear naïve, it is a typical example of distributed knowledge and failure to act on the relevant bits of it when necessary.

Informal learning systems are very prone to misdirection.

At this point, it becomes apparent that communication is the foundation of modern organizational learning. Without it, managers are cut off from the external environment, have to rely on gossip and rumours, and will never get a chance to develop a useful mental model, while customer-facing employees will always struggle to filter and act upon their significant observations. Factors such as a reward system based on data that led to success in the past may also inhibit learning, as significant effort will be directed into keeping these indicators at desired levels at the expense of being open to recognizing changes.

Informal communication within companies is actually a gossip protocol – it relies on a small group of people exchanging pieces of news to build a shared understanding of a situation, but since there is no effective means of contradiction removal, the shared understanding is incomplete at best, and self-contradictory at worst.

For organizational learning, effective communication is as important as putting conscious effort into learning. One cannot exist without the other.

The pitfalls of using symbols

There is no such thing as a complete transfer of knowledge. We all define meaning in the context of our experience, therefore each bit and each word can mean something different to different people. Often, we rely on the assumption that our interlocutor understands words in exactly the same way as we do – which is rarely true, but most of the time gives ‘good enough’ results. That assumption is necessary. We cannot precisely define everything every time – it would be impractical if not impossible; and we often unconsciously set cut-off points – concepts that define our environment and we think should

be known to the people we are talking to – and therefore we can miss important differences in situational understanding.

We have to set borders. Those borders sometimes cause small inconsistencies that are easy to reconcile, sometimes bigger misunderstandings, and sometimes a valuable ‘fresh perspective’, when a new person, with a different set of experiences, draws conclusions dramatically different from our own.

It’s useful to think in terms of components. The dictionary defines these as a part of a larger whole. In any situation, we can usually identify and agree upon the key factors, systems and the most important actors, exactly what we understand by them and how they all relate to each other; and if everyone agrees to this shared understanding, we can discuss and identify potential solutions and their effects.

Let’s look at some examples of how components are used in communication. Imagine someone mentioning the following terms:

- **Electricity** – knowledge of electricity is reasonably standard and ubiquitous. Nearly everyone will agree what electricity is (power from the socket), what the consequences of a lack of it may be, and what electricity can be used for. The contract is so well-known that few people are curious enough to check how electricity is delivered. It is not important to the vast majority of communication and usage needs; the only thing you need to know is how to put a plug into the socket.

- **Search engine positioning** – most people will agree this is some magic mumbo-jumbo that makes a website appear higher in the search results for a given item, and so drives more traffic to that website. Most people will also agree on the consequences of their competitors employing search engine positioning. Thus understanding of what this component does, what its contract is and the consequences of using it are pretty much ubiquitous and consistently understood, though not everyone will know how specific actions (such as adding certain content to a website) will affect its position in the search.

- **Artificial Intelligence** – today, few people agree about what it is and what it can do. Even fewer people know whether AI is something that they could use in their situation for their benefit. Talking about AI as a single component without going into detail is likely to cause communication errors that will become even greater as the knowledge of the parties involved is less consistent.

So, sometimes it is enough just to use the name of the component, and sometimes it is necessary to elaborate on what the component does. Thanks to the work of LEF’s Simon Wardley, we know that all components mature over time, and that knowledge about them spreads. What is today new, novel, prone to change, full of potential and known to a small group of people, will tomorrow be a cost of doing business that nobody talks about, because it is so well-known and taken for granted.

**Figuring out what others know**

The shared understanding of a component is only one of many various but correlated attributes that can be aggregated into a meta-attribute named evolution. This has four major stages:

- **Stage I** (Genesis) describes something very new and highly uncertain, with no real business use. Components in this phase have potential that needs to be explored, and lack of prior experience and data means plenty of experiments will be required. Knowledge about what it is and where it can be used does not exist.

- **Stage II** (Custom-built) is when a component is first applied in a commercial environment (i.e. delivers value). Usually, the component is not yet traded; since it is still new and uncertain, each usage of it is, in fact, an experiment. It may or may not work, and therefore it cannot yet be transformed into a product. Only a handful of people know what the component is and where it might be used; the rest wonder whether it might be something for them.

- **Stage III** (Product/Rental) describes components that are available as off-the-shelf solutions. Past experiments have generated enough knowledge to make it possible to define the result of using it and in which circumstances

---

7. See, for example, [https://www.youtube.com/watch?v=xhNYYfyBqB4](https://www.youtube.com/watch?v=xhNYYfyBqB4)
it will work. There is strong feature-by-feature competition between its suppliers. The majority of people know what the component is and whether it will work for them.

- **Stage IV** (Community/Utility) is reached as the component matures and is no longer considered to be a competitive advantage but a standard way of doing things, and the competition becomes focused on doing things more efficiently. Everyone involved now knows what the component is and how to use it.

Thus the level of evolution defines the ease of communication through the likelihood that both you and your interlocutor have the same thing in mind. It shows which components bear a significant risk of miscommunication and helps identify what should be described in greater detail and what can be assumed to be widely known.

Determining the evolution stage of a given element would be a very time-consuming activity were it not for Simon Wardley’s ‘cheat sheet’ shown in Figure 4.

<table>
<thead>
<tr>
<th>Type</th>
<th>I – Genesis</th>
<th>II – Custom-built</th>
<th>III – Product</th>
<th>IV – Commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ubiquity</td>
<td>Rare</td>
<td>Slowly increasing adoption</td>
<td>Rapidly increasing consumption</td>
<td>Widespread and stabilizing</td>
</tr>
<tr>
<td>Certainty</td>
<td>Poorly understood</td>
<td>Rapid increases in learning</td>
<td>Rapid increases in use</td>
<td>Commonly understood in terms of use</td>
</tr>
<tr>
<td>Publication focus (Press, social media)</td>
<td>Wonder of the component</td>
<td>Building, constructing, awareness and learning</td>
<td>Maintenance, operations, installation, features</td>
<td>Use and what can be built with it</td>
</tr>
</tbody>
</table>

| General properties | |
| **Market** | Not existing or undefined | Forming | Growing | Mature |
| **Knowledge** | Experimenting | Learning how to use | Learning how to operate efficiently | - |
| **How people in the industry branch see it** | Too early to say | Domain of experts | Expected to be used | Trivial and expected to be used |
| **User perception** | Exciting, surprising, confusing, different | Emerging | Expected | Standard |
| **Perception by the business** | Possibly a competitive advantage | A competitive advantage. Focus on ROI and example | Advantage through implementation or additional features | Cost of doing business |
| **Focus on value** | High future worth | Seeking profit | High profitability | Reducing margin compensated by volumes |
| **Understanding** | Unpredictable | Increasing understanding Development of measures | Increasing education Refinements of measures | Well defined, stable and measurable |
| **When comparing with other companies using the same component** | Difficult to understand what the other company is doing | Possible to learn from other companies | Possible to find feature differences and identify important ones | Possible to find out best practices worth copying |
| **Failure** | Tolerated if not assumed | Unsurprising | Not tolerated, focus on improvement | Not expected |
| **Marketing approach** | Gambling | Exploring a found value | Market analysis | Metric-driven |
| **Efficiency** | Reducing cost of change | Reducing cost of waste | Reducing cost of deviation | |
| **Decision drivers** | Heritage/culture | Analyses and synthesis | Previous experience | |

Figure 4 – Simon Wardley’s cheat sheet for determining the stage of evolution of a given component
Evolution is not a discrete scale but a spectrum, and because it is driven by the forces of supply and demand, it cannot be stopped. Knowledge will always spread, and that process is represented by the component moving to the more mature stages. The cheat sheet shows where potential value can be found, which helps direct company research efforts.

So, we know how much effort, and where we have to put it in to communication to avoid mistakes, and on which components we can cut corners. But looking at components one by one is not enough. None of them exists in a vacuum; they are all connected with each other, and it is necessary to be able to explain not only what a component does, but also how a system of components will work.

**Visualizing a system**

The process of giving a structure to explaining what one has in mind is quite simple. Start with determining what user need is being addressed – the ‘user’ could be your commercial customer, another team that uses your resources, or a regulator that supervises your operations. Then comes a question to ask recursively: What do I need to get this done?

One way to communicate is to create a diagram of your current thinking about the situation, like the example shown in Figure 5.

The diagram is clear and concise, and allows you to identify the things that you know and things that you do not know, and in particular if you have a component that you know nothing about. Anyone else can refer to your diagram and use it to show how they see things, and the discussion will be a very structured knowledge exchange.

There is a convention of putting user need at the top of the diagram – without agreeing what is wanted it is very hard to talk about the underlying value chain. With that convention, it is no longer necessary to add the ‘requires’ label, as shown in Figure 6; it is clear this is how value is being created for the end user.

In order to figure out which components bring uncertainty (in communication, but also in the value proposition), it is necessary to add the evolution axis, and so create a Wardley map (Figure 7).
From ad-hoc to strategic learning

With a Wardley map, it becomes easy to determine what is being done (the user need at the top), which components are important, and which of those may be difficult to replicate, are scarce, unstable or difficult to communicate. For example, in the map in Figure 7, the job of copy writer is the most unstable component. It is difficult to teach, requires creativity and other rare traits\(^8\), and what’s more, a copy writer might not be easily replaceable in a given context.

With a Wardley map, explaining scenarios becomes far easier. A person knowing that copy writers are scarce (and thus expensive) and who had noticed some experimental uses of AI could propose the transition shown in Figure 8.

"With a Wardley map, it becomes easy to determine what is being done, which components are important, and which of those may be difficult to replicate, are scarce, unstable or difficult to communicate."

---

8 This view might be biased, and a copy writer may have a completely different opinion. If so, this point should be challenged and a better map created, to the benefit of all parties involved.
From ad-hoc to strategic learning

Figure 8 is of course simplified, to illustrate the transition. Many more things are actually necessary, and therein lies the beauty of maps: by showing a map to an expert in the field, you can easily get a spot-on piece of insight — for example, you may be informed that AI currently cannot do the creative work of a copy writer. One way or another, the directed learning happens.

Scenario analysis plays an even more important role. There is likely to be cost associated with learning, so in the example in Figure 8, a number of questions should arise, such as:

• How many consultants need to be hired to get this transition done?
• How many tests will need to be run before human copy writers can be replaced with algorithms?
• What else needs to happen before that transition?

They are all valid questions, and most of them do not have answers. The knowledge is simply not there, so no amount of investigation, analysis and planning will reduce uncertainty significantly. You have to experiment, and since experimentation is expensive, it would be good to know when such an investment is likely to be worth it.

It is important to remember that co-created models of reality will get more refined and more useful with each iteration. With each pass of the learning loop, some new observations might be added, new knowledge may be revealed, and irrelevancies removed. Over time, the cost of the effort required will go down.

However, project execution is not easy. No project consists of a single component, and usually there are many, with different levels of uncertainty and so different rates of potential success. More than that, uncertainty and risk come not just from the components, but also from component integrations, as any two parts in any system might refuse to work together. (Executing projects by removing uncertainty is the subject of a previous practice paper9.)

We said earlier that learning has to happen around the why? question — what user need should be addressed and why? — and this highlights a huge learning opportunity. The basic pattern is a two-step process: first, hypothesis (the value delivered to the customer), followed by the shortest path to project verification (i.e. leading to a success or project cancellation).

Note how the project execution paradigm changes here. Projects are now a series of steps, where each step reveals some new information and moves the company in a given direction, with tightly controlled costs, so no failure brings the company down. They can be perceived as a series of learning exercises which ultimately lead to profits.

Mandating a culture of learning

As mentioned earlier, the culture of learning cannot be established by force. It is a mindset transformation that takes many steps, starting with a simple spend control mechanism.

Spend control

The spend control function puts a project through a mandatory process of asking questions like ‘why are we spending money on this?’ and ‘what will we get out of it?’ It is often considered to be just an additional hoop to jump through that slows things down. Worse, it annoys some people and can provoke them into negative creativity, when they will do all they can to avoid the spend control process.

These opinions are not without grounds, as spend control is often exercised to limit spending instead of rationalizing it. But it can also act as a core learning loop, keeping the management informed about what the company is doing and why. And while this effect does not have to be achieved instantly, there is an immediate benefit...

“Projects that are almost guaranteed to succeed can offer only marginal revenues.”

9. Removing uncertainty from projects with clear business outcomes is described in the LEF paper Mapping #3: Uncertainty-Driven Project Execution
From ad-hoc to strategic learning

to the company: spend controls can be used to ensure that no project is funded unless the team responsible for it has put enough effort into learning, both about the customers and what it will take to provide value. Sometimes, it is not necessary to fund the entire project, but just the initial, high-value learning part, achieving true business agility.

The main purpose of the spend control function is to ensure proper effort is put into the learning activities.

The trick to implementing spend control successfully is to take an iterative path rather than attempting to understand the entire environment before taking any action. So, after gathering initial knowledge, and initial reconciliation, start an ongoing process of taking the best available action towards either further learning or producing assets.

Conscious learning is expensive when first introduced to the organization, especially because it touches nearly all aspects of it, and because every organization is different. Therefore, the most basic risk-and-reward thinking implies it is necessary to apply it to the few most significant projects, where savings can be greatest despite small mishaps during the experimentation with learning.

Introducing learning to a project requires the steps outlined below:

1. **Bootstrap the learning process**

   For each project that is interesting enough to progress (either because of its size, cost or potential profits), it is absolutely critical to capture and record the context or landscape of the project — an explanation of how the life of end users will be improved (delivered value) and analysis of the potential market competition. Then, identify the climate — forces influencing that landscape and any anticipated changes to it. These are the forces that you cannot control (such as demographics, political changes, social changes and others) and that prevent the landscape from staying still.

   The project must fit the landscape during its entire lifecycle.

   Identifying the landscape and climate is a learning effort that has to be approved by the spend control function, and the output needs to be consistent and show clear value delivered to end users. For example, in Figure 9 we can clearly see value for the end users (bike riders), how the insurance company will have to change (a different offering) and what we can do about that (gather measurements). The figure also marks components we are not certain about, because we are not an insurance company.

![Figure 9 – A simple landscape and climate map showing ‘why’ it is worth an IT company pursuing the idea of creating an app supporting bike riding. As there is a transition expected towards pay-per-use automatic insurance, insurance companies will need new kinds of data to construct their offering. This shows that not everything is known and our knowledge has gaps.](image-url)

- Transition to automatic, pay-per-use model of insuring your bike ride. This is already happening, and may become mainstream in 3 years.
- We do not know how existing insurance companies calculate their risk model, but they certainly have to use some sort of models and they need some data.
- We can develop an app that will track what is the length of a bike ride and what is the environment, and record data that could be used to develop pay-per-use models.
With a graphic representation such as a Wardley map, it becomes possible to store our understanding of a situation and reuse it later when similar projects are taking place or when the environment has changed.

2. Iterate

The landscape and climate map is likely to be incomplete, because either the company lacks knowledge about a particular component or that knowledge is not available at all. So experiments have to be planned that will uncover knowledge to reduce further risk and narrow the project output, yet keep the risk-to-reward ratio at an acceptable level.

In the case outlined in Figure 9, there are three major areas of uncertainty:

1. Is this what customers really want? Nobody is going to buy a solution from you until they see value in it. Insurance companies will seek products like this only after they realize the market disruption is unavoidable. It would be good to check whether this has already happened, and if it hasn’t, then estimate when it may happen to ensure the project has the right timing.

2. How can you make users install the app and provide the data you need? This is a critical question about the business model (what can we give those users?) and privacy protection (will we expose where customers keep their bikes, making them vulnerable to theft?). Similarly, who’s going to pay and how? Which data should be gathered? This is an extensive learning opportunity and if the disruption has not happened yet, we will be the first, so we have nobody accessible who could answer those questions and thus we need to experiment.

3. Building the app. In this case, this is the most certain aspect of the business, given how mature and repeatable mobile apps are. Each of these mini-projects reduces uncertainty, and if completed successfully will increase the chances of overall success. If the biggest uncertainties are tested first, then if they fail, the project can be cancelled without much loss, as no money has been spent on things that are known and predictable.

If this was your company, which action would you take and why? The most obvious is to confirm the user need – making contact with a potential insurance company and having a casual conversation about the map will act as a basic test. This course is low-cost but potentially significant – project cancellation or suspension at this stage does not cost a lot, and there’s little wasted investment if it turns out that the timing is wrong, and perhaps the project can be revisited in a couple of years.

At this point, learning and execution blend together. In some situations, for mature components, the best tool for learning will be plain old planning. Sometimes experimentation will be necessary, and sometimes a mix of both. Every activity should be focused on removing uncertainty and will be therefore a learning activity.

Every activity in a company is a learning activity.

3. Manage the double learning loop

The actions outlined above can only succeed if you have a mental model of sufficient quality, and that is never guaranteed. The world is ever-changing, new players come and go, new dependencies and relationships are created and destroyed. New things appear that have not been analyzed, a lot of uncertainty is associated with them, and models covering them might not yet exist.

Staying up-to-date with all the changes is difficult in itself, and is complicated by our narrow, personal perspective. Once we spot something that does not fit our model, we should take time to determine whether our model needs to be updated. This does not require any elaborate exercise; it is rather about providing an honest answer to the following questions:

- Which assumptions were wrong? Was one of our observations incorrectly interpreted, an assumption not tested or a belief not true? Take the opportunity to reflect upon how we understand our environment.

- Back then, was there anything hinting we should take a different decision? It is vital to distinguish our past knowledge from everything we have learned in the meantime. The ‘new’ knowledge changes our perspective, but it was not available at the time we made the decision, so the question is whether at that time, we could have made a better one. This is an opportunity to improve our learning and decision-taking process.

Again, mental model updates will not happen until there is a budget for learning. People who work with stable components do not need it as much.

---

10. See Figure 3.
People working on high-risk, high-uncertainty projects will definitely work more slowly because of all the experiments they have to perform.

Fostering informal communication

The approach shown above is excellent for execution of a single project. However, running projects in isolation leaves massive synergy effects untapped. There are two categories of knowledge that can be reused across the company. The first is all the information about the external world (landscape and climate), and the other is data about existing company assets (components).

The initial role of the spend control function is to ensure that the learning effort is put in. Over time, this role expands. Once employees analyze the environment habitually, the spend control group will be able to lower the threshold, include more projects, and start first connecting people who can benefit from the connection, and then accumulate business knowledge and share it directly with employees.

Efficient knowledge sharing requires two things:

Landscape and climate repository

The name says it all – whenever somebody is analyzing a fragment of reality outside of the company, especially while preparing for a project, this knowledge has to be stored. This achieves several goals:

- The employees working on a project have to understand the purpose of their work. This will improve the quality of their own decisions (including objecting to the project early if they know something other people do not) and will take the load off managers, letting them focus on what matters for them.

- If a project is cancelled/paused for whatever reason, it will help identify why the project was not executed and what trigger could reignite it.

- Projects addressing similar customer groups or using the same components will be able to share some effort.

Pay particular attention to the first bullet: the critical enabler of company-wide learning and responsible delegation of decision-making is providing business context to every employee – showing who the customers are, what value they expect, and how that expectation may change in the future. Your employees are also able to pick up early weak signals (such as new products or practices appearing in the market) and feed this back to the landscape.

Component repository

The asset repository is a well-known and straightforward tool. Its primary function is to let employees trying to execute projects discover relevant work that has been already done and reuse it. (Note that it may be worthwhile checking whether more efficient solutions are available first.)

Strategizing learning

Executing projects within a learning loop and then connecting the right people together ensures that the right effort is put into learning, and that informal learning and communication exist and work well.

But that is not all. Such an approach to learning is purely reactive, as it is driven by employees’ ideas – albeit consistent context makes those ideas far more aligned than any other approach. Additionally, the company stops relying on individual talent to build competitive advantage, and starts relying on well-defined processes. This is especially important when you realize that the talent does not define future performance – the environment does, and therefore setting up the right learning culture is more significant than any other initiative.

Our message is that if you build sufficient situational awareness about your environment and about your company, you can do three things:

1. Focus on components that are expensive and investigate how to cut costs where necessary. Not all the components are equally important, and depending on the current level of evolution, you can try to use team knowledge and set a learning budget that will be proportional to the importance of the component and the imminence of a significant change of attributes.
2. Predict how evolution will change the market, as in the insurance example in Figure 8. Such a scenario analysis can be a useful stress test or opportunity test, and reveal the company’s strengths and weaknesses, and where there may be future sources of value.

3. Monitor everything else with a minimal effort. Designate some time to just look at interesting things, consider it to be a cost, and try to use it to identify events that indicate situations described in previous points, to know what to expect from the future.

The spend control function stops being a spend control at this point, as it not only coordinates existing efforts, but also shows the direction of further research and learning activities. In other words, spend control is transformed into the strategic learning function, completing the transformation of the entire company.

“Spend control is transformed into the strategic learning function, completing the transformation of the entire company.”
Summary

Transformation from an execution-focused company to a learning one is not an easy task, but it is an effort definitely worth undertaking. One of the most interesting side-effects is a shortened project execution cycle, consistent with modern elastic management approaches. Of course, there are challenges, too. It will become apparent that at some point the spend control function requires a multidisciplinary team – to juggle all the activities effectively, you will need finances and marketing in addition to any field knowledge, because the ultimate purpose of any company is to earn money for shareholders.

Close attention to the risk-and-reward rule reduces overall risk in your company. It is far more difficult to miscalculate your position if you know the target you are trying to reach, the approximate path to it and the first, most difficult, step.

With a little practice, you can try not only to anticipate market changes but also to manipulate the landscape. Unfortunately, success here will depend very much on the company’s position – what assets it has and what it is trying to achieve. There is no universal path that will be good for every company, but learning will let you discover yours.

If you are interested in a transition from strategic learning to developing a true strategy, LEF can help you.

Can you afford … not to learn?
Regional Headquarters

The Americas
1775 Tysons Blvd
Tysons, VA 22102
USA
3000 Hanover St
Palo Alto, CA 94304-1112
USA

Asia, Middle East, Africa
Level 9, UE Biz Hub East
6 Changi Business Park Avenue 1
Singapore 468017
The Republic of Singapore

Australia & New Zealand
26 Talavera Road
Macquarie Park, NSW 2113
Australia

North and Central Europe
Schickardstrasse 32
71034 Boeblingen
Germany

South Europe
Tour Carpe Diem
31 place des Corolles
CS 40075
92098 Paris La Défense Cedex
France

UK and Ireland
Floor 4
One Pancras Square
London
N1C 4AG
United Kingdom

United Kingdom
Bracknell/Amen Corner B1-2, UK
Cain Rd. Amen Corner (Bldg BRA02)
Bracknell RG12 1HN
United Kingdom

Leading Edge Forum

Asia Pacific and Australia
135 King Street
Level 20, Sydney
NSW 2000
Australia

France
Tour Carpe Diem
31 place des Corolles
CS 40075
92098 Paris La Défense Cedex
France

Germany, Austria and Switzerland
Romerstrasse 11
D-82049 Pullach
Germany

United Kingdom, Ireland, Iberia, Italy, Benelux, The Nordic Region and South Africa
Floor 4
One Pancras Square
London
N1C 4AG
United Kingdom

United States and Canada
1775 Tysons Blvd
Tysons, VA 22102
USA

About DXC Technology

DXC Technology (NYSE: DXC) is the world’s leading independent, end-to-end IT services company, helping clients harness the power of innovation to thrive on change. Created by the merger of CSC and the Enterprise Services business of Hewlett Packard Enterprise, DXC Technology serves nearly 6,000 private- and public-sector clients across 70 countries. The company’s technology independence, global talent and extensive partner alliance combine to deliver powerful next-generation IT services and solutions. DXC Technology is recognized among the best corporate citizens globally. For more information, visit www.dxc.technology.

About Leading Edge Forum

Leading Edge Forum (LEF) is a global research and thought leadership programme dedicated to helping clients reimagine their organizations and leadership for a tech-driven future. We serve as a strategic touchpoint for CXO teams to provoke and challenge their thinking to help them win in the 21st century.

We believe that as business and IT become inseparable, virtually every aspect of work and the modern firm will need to be reimagined, and this creates exciting new digital opportunities.

Through an annual membership programme of research, events, on-site workshops and advisory services, we support senior leaders in areas such as strategy, organizational change, executive education, talent development and the future of the IT function. Members enjoy personalized access to our global network of thought leaders, clients and leading practitioners.

Leading Edge Forum is part of DXC Technology. For more information, visit leadingedgeforum.com.

© 2018 DXC Technology Company. All rights reserved. 10/18