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Memo 1

In the reading materials for Week 3, the authors and speaker discuss the building blocks that allow for creativity, sourced from success stories as well as data from studies. Many of these articles touch upon similar concepts, and can be summed up in a couple of tenets to foster creativity, the fundamental component being a proper understanding of time and goal management for projects. This enables creativity from an individual to an organizational level, which are equally as crucial regardless of scale. Finally, being flexible to accommodate for differences opposed to the expected standard roles can still lead to desirable results. I have found that these principles are the most major and effective points across Week 3's materials.

If management at an organization does not have a proper structure for time management across all roles for all projects, then none of the other components can be implemented. As Fiona Murray's and Elsbeth Johnson's article, "Innovation Starts With Defining The Right Constraints", discusses, a commonly imposed constraint within this structure is the budget and risk pairing, though it ends up not being very helpful. Though both of them clearly outline the maximum on what is allowed on the project, budget limits force management to specify how much everyone is working with, preventing them from working with more open ideas. Risk assessment tends to simply state why an idea can fail, how likely it is to fail, and the consequences of this failure, thereby discouraging creativity. The tradeoff with applying this mentality would be that it is different and potentially worse looking on paper compared to the

more traditional outlook. (Murray, Johnson) Worse yet, James Allen asserts in his article "Why

businesses can't manage creativity" that it cannot be scheduled, indicating no expected time for it

to manifest and therefore posing a risk. These creative ideas are incredibly dependent on the

environment of the employee, and it is proven that this must vary for those few critical ideas to

appear. They are very often not just produced in the workspace, no matter how progressive and

comfortable it may be. Instead, it would be more effective to provide more time with deadlines,

vacation, and daily work routines for more returns on creativity. (Allen) It is proven that

companies that are active in ensuring their employees' comfort stand to gain much more, as this

encourages productivity and increases motivation. This is not a new phenomenon, but it is

unlikely that most companies understand how important this is as an incentive for employees to

potentially put in extra work, or contribute an out-of-the-ordinary idea. Without an indication

that the organization can provide something desirable to their workers, they in turn will probably

not feel inclined to return the favor.

Assuming that something akin to, though not limited to, the aforementioned structure is

applied, an organization can start focusing on the actual sources of creativity within. Regardless

of the scale, an individual's idea and the patent it may result in for the company all deserve

attention. To accomplish this, leaders of teams must create the space necessary to allow people to

put in hard work and share their talents and interests for innovative problem solving. (Hill)

Murray's and Johnson's article also mentions this, stating that the environment must be

conducive to allow all informed perspectives, instead of only valuing a few people's opinions.

For this pro-creative environment to exist, they must unlearn conventional notions of leadership

in order to achieve innovation together, rather than relying on the few all the time. Hill calls this

phenomenon group genius replacing solo genius. However, since more people are included in the development process, the process must also become multi-part that is interrelated and less linear. Hill describes three main characteristics to make this new process successful, sourced from other already noteworthy companies: creative abrasion, agility, and resolution. By encouraging abrasion to amplify differences and capitalize on them, all points of view can be advocated for and understood, allowing for more potentially useful ideas to surface. To help, being agile in reflecting and adjusting these ideas requires deep understanding and skill for the field, and takes away the focus from merely seeking one solution that is right. Finally, creative resolution refers to the decisions on these ideas, whether it be combining them or creating a new one from the old. These factors Hill proposes are all crucial, because without reconsidering the normal method of compartmentalizing everyone's tasks and roles, there would not be room for a process that accounts for everyone's thoughts and ideas. Hence, placing every teammate on the same level in regards to the project is the primary focus, and creative agility and resolution will follow. By making sure there are as many contributions accounted for as possible, there are less solutions that could be lost.

Additionally, accidents that may yield desirable outcomes should be encouraged whenever and wherever possible. Sarah Jane Gilbert emphasizes the criticality of accidents in the project development process in her article "The Accidental Innovator". Many stories of accidents are looked down upon as they technically were unintentional or simply had a different intended outcome, making them unpredictable and a risk. However, the amount of these stories is too large to simply brush them off. To boost the probability of these positive accidents, a couple of facets should be considered. Accident intensity, as Gilbert described, is defined by how removed

the actual result is from the intended one. A different yet working drug than the intended one would have low accident intensity, whereas a whole new compound with new uses would have a higher accident intensity. Gilbert also brings up the notion of selective retention as a way for teams to know what ideas and outcomes they would want to keep for future use versus throw away. Through experts and managers who have a deep understanding of their field, it should not be difficult to implement this concept as well as expand the workplace constraints to increase the probability of these accidents.

The final concept discussed is the idea of being flexible to accomodate for differences than that of the expected standard, which can still allow for desirable results. Its core is research and development, though this department is often not nearly as productive as it should be. In "A Toolkit of Policies to Promote Creativity", the authors go over points of interest and potential improvement for R&D, especially relating to how it is indirectly discouraged. One notable example includes certain discrepancies in geologically different R&D incentive policies, which causes R&D efforts to be directed where it might not yield the most results or be the most effective. As a result of these differing policies, companies will tend to choose areas with the most that they can take advantage of, which often is not conducive for improving R&D efforts even though the numbers are in their favor. This can end up not increasing net R&D overall in the economy, or place a limit on how much it grows. "A Toolkit of Policies to Promote Creativity" also details patent boxes, which are a way to incentivize research. In spite of that, they induce tax competition by encouraging firms to shift their IP into different tax jurisdictions, especially in the case of multinational firms. While this might be beneficial for the government, it does not actually help with the quality nor quantity of R&D. Therefore, it should be

discouraged as it ends up being a harmful form of tax competition that mangles the tax system and does nothing to benefit general R&D.

Instead, it may be more helpful to look into other policies such as government research grants. (A Toolkit of Policies to Promote Creativity) Though public R&D grants might not directly make an impact on development and innovation, they might indirectly cause more private R&D spending or additional private spending on top of that. It has been documented to have a small ~7% increase in research output, and one finding indicated that a $10M increase in NIH funding led to 2.7 additional patents from private firms, indicating more knowledge spillover to those firms. (A Toolkit of Policies to Promote Creativity) Thus, there is a strong correlation between academic centers and private sector innovation through spillover, and more collaboration between university research centers and firms tends to lead to faster commercialization, patent innovations, and follow-throughs to potential startups.

In order to better manage these changes in focus to R&D, should they ever come to pass, it would likely be prudent to specify what cannot happen as opposed to what should happen. With bigger, vaguer goals that allow for multiple possible solutions in a specified timeframe as opposed to smaller, specific projects on a complicated timetable, leaders must adjust decision cycles to be around outcomes and time constraints rather than simply use budget and risk as constraints. This increased flexibility will also be bolstered by collaboration on equal footing, to allow teammates to help each other cultivate ideas rather than be bound to the required tasks.

These components for encouraging creativity echo similar sentiments, often discussing workplace team dynamics, as well as individual requirements by the company. While they might seem risky from a standpoint that is used to the budget and risk approach, more and more

organizations are adopting these policies with promising returns. They will be the ones

representative of how innovation should be implemented, and hopefully inspire others to rethink

their organizational structures.