

Unleashing the Creative Potential

Lessons learned from managing the Goldenson Center for Actuarial Research

HUMAN PRODUCTIVITY is a well-studied area in academia and business organizations. Every organization strives to maximize individual and team creativity with its employees, but for a variety of reasons, many of these human resource and management efforts fail.

Over the past year as full-time director of the Goldenson Center for Actuarial Research, I have been fortunate to be able to work with students at the University of Connecticut and learn, from experience, six important lessons on how to maximize individual and group creativity:

1. Complete freedom in thinking is necessary to unleash the creative process.
2. Students are the best resources to utilize for projects requiring creative thinking.
3. Students adapt and learn quickly from one another.
4. Students are extremely responsible when they are given total ownership of a project.
5. Students are naturally self-governing as a group.
6. Once all of the above ideas are incorporated, work becomes a totally fun and gratifying exercise.

Clearly, all my findings are student-centric because the Goldenson Center works exclusively with students, and my one year as full-time director makes for a limited sample size. However, by replacing “students” with “employees,” some of these lessons can be applied to fit in with the more varied and complex nature of the work force population.

Any effort to stimulate individual and group creativity in an organization would reap the benefits of a highly productive and motivated work force where everyone strives to maximize their potential, both individually and collectively as a team.

This article describes the history leading to these insights.



Janet and Mark L. Goldenson Center for Actuarial Research

Illuminating Industry Innovation

Background

I worked for more than 25 years as a practicing actuary with major insurance companies and consulting firms, and I have always been fascinated about what drives the creative process in an individual. In particular, having served in a management role for most of the past 25 years, I have also been interested in understanding the group dynamics of the creative process. A group of creative individuals may not necessarily be creative as a group; on the other hand, a group composed of mainly non-creative individuals may turn out to be extremely creative at the group level.

In the past year I have begun to understand how the creative process can be maximized—on both the individual and group levels. This understanding happens to coincide with the period in which I started managing the Goldenson Center on a full-time basis. The Goldenson Center has been in existence since 2008, and I have played the role of director since its inception. However, until June 2014, I had a dual role as director of the center in addition to holding a full-time position in industry. While it was a

great learning experience for me to juggle both these responsibilities, I could not fully appreciate creative potential in the context of group dynamics until fostering it became my sole responsibility.

Rebranding the Goldenson Center

The lessons I have learned about creativity come from working with various teams of students on truly challenging and impactful projects from industry. The Goldenson Center has always had one overriding mission since its inception—to focus on applied actuarial research projects, which serve the needs of industry in the region. An advisory board of industry leaders helps the Goldenson Center stay true to its mission and provides most of the research projects undertaken by students at the center.

One of the first things I had to accomplish when I started on a full-time basis as director was to clearly articulate the Goldenson Center’s brand. With the assistance of a small team of students who served as my marketing team, we first created a logo and slogan for the Goldenson Center, as shown above.

We then put together a more detailed document outlining the new brand of the Goldenson Center in the spirit of our new logo and slogan. In particular, we focused on the Goldenson Center’s capabilities of undertaking innovative research projects. Once we laid this framework, I turned to the advisory board members to provide us with the appropriate projects.

Project Challenges

You know the expression “Be careful what you wish for”? I never expected to get such a surge of support from the board members, and I now had an unexpected new problem—we had too many projects to handle. Not only did we get several projects, but also each

project was highly challenging, requiring complex modeling and sophisticated analytical thinking. Even global actuarial consulting firms with their vast resources of experienced actuarial consultants and analysts would have considered these projects challenging. Here I was, with my makeshift team of actuarial students with no real-life experience whatsoever, pledging to tackle these projects. Besides assembling the right team for each project, I also had to learn how to effectively manage anywhere from three to five of these projects simultaneously.

Here are a couple of examples of the challenging projects we took on during my first year as full-time director of the GoldenSon Center. Both examples required sophisticated skills in using R, SAS, Excel, and VBA software.

- Create an optimal lifetime individual financial planning model that combined pre- and post-retirement phases, with different insurance and financial products at each phase used in the optimization process. In addition, the model had to be sensitive to the individual's level of financial dependencies, savings, and spending patterns. The final model was a combination Monte Carlo-Markov Chain (MC-MC) stochastic model. This stochastic model was then used to create an analytical generalized linear model to closely approximate the MC-MC model, which could then be used by a financial planner to immediately generate the optimal pre- and post-retirement financial planning strategy.
- Optimize the staffing requirements for a call center. The optimal staffing requirements varied by the hour each day and by day as well. The optimization criteria were probabilistic in nature, requiring a prescribed service efficiency criterion to be attained with a given level of certainty. The model that we created was a combination statistical and Monte Carlo stochastic model. Using historical data on number of calls coming in, call handling times, abandoned calls, and call waiting times, appropriate statistical models had to be created to fit the data. These



statistical models were then used in the final Monte Carlo stochastic model to determine the optimal staffing levels. In the process of working on this project, we created several innovative algorithms to speed up the optimization process as compared with using a purely exhaustive approach.

The Transformation Process

So how did I transform young, inexperienced students into a group capable of tackling these huge projects? In short, I had to use all my years of management experience to create a working atmosphere that would maximize both the individual and group creativity of my student teams. Here is what I did:

1. Every project was done by a **team of students**. Most team members were graduate students in actuarial science, but depending on the project, I brought in students in statistics and undergraduate students in actuarial science as well.
2. Teams were generally **overstaffed** to accommodate the transient nature of student resources—they do graduate eventually—and to expose as many students as possible to real-life client projects.
3. Students were each paid a flat amount per project by the center, **independent** of the number of hours it took or the different levels of responsibilities of each

team member. Students were motivated by the experience they obtained on these projects and the company exposure and visibility they received.

4. Students were involved in **every step** of the project process. Although I was responsible for initiating the call with the board member to discuss a potential project, the student team was brought in at the start of the proposal stage. The students, as a team, were put in charge of the weekly client calls, client presentations, interim and final reports, model testing, and documentation. The students were given total autonomy in deciding how to delegate individual roles and responsibilities.
5. I met with each student team **at least weekly** and more frequently as the project neared completion.
6. Every project ended with a **face-to-face presentation** with the client that was orchestrated entirely by the student team.

Lessons Learned

How did these steps maximize individual and group creativity? My personal reflections are as follows:

1. **Complete freedom in thinking is necessary to unleash the creative process.** While every student team member varied in modeling and project management skills, there was absolutely no hierarchy among team members. Everyone received the same stipend and everyone was working toward the same common goal of meeting the client's expectations. As a consequence, the thinking process at our internal meetings was completely free and open. We had animated discussions where we expressed our thoughts and opinions without any reservations. In the process, solutions to some seemingly insurmountable problems started to emerge.
2. **Students are the best resources to work with for projects requiring creative thinking.** Students are in that phase of their lives where their focus is largely related to school issues; their thinking process is not constrained by the broad range of responsibilities faced by working individuals. If Lesson No. 1 is adhered to, then students will embrace it fully without fear of any consequences.

3. Students adapt and learn quickly from one another. This may be one attribute that is unique to students. They are quick learners, particularly when it comes to software and modeling skills, and they learn best from one another. In selecting team members, it was rare that any individual student possessed all the skills required for the project. However, I made sure that each team possessed all the required skills. Then, the students worked together and learned from one another to complete the project.

4. Students are extremely responsible when they are given total ownership of a project. In the working world, entry-level positions have entry-level responsibilities, and generally, workers have to “pay their dues” before taking charge of a major project. No single student was placed in charge of the entire project, but the team collectively had that responsibility. The students had to ensure that the client’s needs were met. Once students were given this responsibility of total autonomy, they never failed to live up to their obligations in any project.

5. Students are naturally self-governing as a group. Once students realized they were completely responsible for the success of the project, they worked among themselves to determine individual roles and responsibilities with minimal intervention on my part. When we were stuck on key issues, some of the biggest breakthroughs came from students figuring out the solution on their own as a group and then sharing it with me at our next internal meeting. This lesson is possibly the secret to unleashing the group creative potential, which comes from providing total autonomy to the group members and letting them govern themselves. It is the main reason I have been able to manage several significant projects at the same time—the management responsibility is largely delegated to the students as a team.

6. Once all of the above ideas are incorporated, work becomes a totally fun and gratifying exercise. It is everyone’s dream that work should be fun, but this is not often achieved in the work force.

I consider myself akin to the conductor of an orchestra of potentially talented but amateur musicians. The players start off unable to perform any music, and my role is to ensure that at the end of the project, the orchestra will be able to perform a symphony that captivates the audience.

For a limited period in a student’s life, we have managed to make the work process enjoyable and fulfilling. Indeed, the more challenging the project, the greater the level of intensity among team members. Plus, students get immediate gratification during the weekly calls, when they share their progress on the project directly with the client. Their ultimate fulfillment comes from the final face-to-face meeting with the client, where every team member is part of the presentation.

My Role

So if the team has total autonomy on the project, what then is my role? I consider myself akin to the conductor of an orchestra of potentially talented but amateur musicians. The players start off unable to perform any music, and my role is to ensure that at the end of the project, the orchestra will be able to perform a symphony that captivates the audience.

I am responsible for negotiating with the client company to obtain the initial project. Then, the students take charge, and my job is a delicate balancing act of not stifling the creative process that I want to unleash, while ensuring that the client’s needs and the highest professional standards are met. I have an

open-door policy and students can stop by anytime with questions, to share ideas, or just chat.

While every decision is made by the team, in the event of a choice of approaches, I generally make the final decision. Any final decision I make may be a variation of the team’s decision, but is never made to assert my authority as director of the center. It is largely based on my years of working experience in being able to better understand the needs of the client. (By the same token, the team has often come up with alternatives to solutions that I have suggested that turned out to be better.)

Conclusion

On a personal level, the most rewarding experience has been seeing how my students grow in knowledge and confidence over the duration of the project. These students can stand up to any grueling interview process because they have experienced every step in a highly significant project and participated in every major project decision. Typical interview questions like, “What are your strengths?” and “How do you function in a team environment?” can now be meaningfully answered in the context of an actual major project on which students have worked.

Can the Goldenson Center model be replicated in the corporate world? It would be possible if the reward process in a corporation recognized both individual and team accomplishments. Otherwise, a hierarchical process would emerge that would make it difficult to maximize individual and group creativity. Small businesses, which are generally less structured in their management philosophy, may be the best fit for this approach. However, some aspects of team management I have shared here could be adopted even in the corporate world, such as encouraging a free exchange of ideas, greater autonomy, and ongoing feedback. □

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