

Company wide Program to Level Up  
100% of employees within 18  
months

Honeywell Design For Six Sigma  
Case Study

# I. Introduction

- Overview: This is the case study of one product manager among several who finished ahead of schedule and helped some of the other program managers so the entire company met the deadline.
- Background: Honeywell Aerospace decided every professional needed to be six sigma certified within 18 months. For engineers this meant “Design For Six Sigma(DFSS)” version of green belt.
- Program Manager Background: At that point Jay Lewis had been managing multiple Value Engineering projects to redesign products to be cheaper *and* more reliable. Prior to that he drove a program to do this for an entire aircraft electrical system. Most program managers did not have this much experience with different both engineering disciplines and driving change.

# II. Context and Challenges

- Situation: Honeywell was bought by Allied Signal, which had already adopted Six Sigma and knew they could make the acquisition more valuable by spreading this know-how to the new organization. Their gurus designed a program to coach experts like Jay Lewis to black belt level with a high value project. The Black Belts could then train, mentor, and help others use it to solve smaller problems and become Green Belts. The value of these solutions would exceed the cost of the disruption and demonstrate the methods work even when used for the first time.
- Specific challenge: One problem for engineering is the benefits may take years to realize and impossible to measure. For example a new aircraft design that has eliminated risks, improved quality from the start, and finished sooner won't know it until years later. By then no one can know how much better it is than what might have been. How can prevention be given as much credit as fixing something that is already bad?
- Jay's background in value engineering meant he was familiar with the need to include less tangible metrics such as user friendliness and reliability, in addition to cost of engineering, cost to manufacture, and cost to maintain.

# III. Profile of the Program Manager

- Role needs: For this project each program manager was assigned a different department that fit their skill set. They each would become 6 sigma black belts(SS BB), then teach classes to wider groups, then help the department assigned to them. Each project started with choosing a valuable problem to solve, select the best tools to solve it, make the changes, calculate the benefits, and become certified.
- Jay's expertise and skills at the time were data science, programming, electrical engineering , aircraft systems, manufacturing, test validation, program management, and value engineering.
- Track record up to that point: He had led multiple value engineering redesign projects that collectively saved \$Ms. The first one saved over \$1M a year AND improved the safety and reliability of 777 Boeing flight electronics system and solved many manufacturing issues. He had designed several projects for researched at the University of Arizona. Solved programming and efficiency challenges for Top Secret Communications in the US Air Force.



# V. Implementation and Execution

- Detailed implementation: Collaborated with directors and experts in engineering, finance, customer service, and production to certify all engineers in Design for Six Sigma(DFSS).
- Overview of role: Jay met weekly with department heads to highlight success stories, overall progress, and raise concerns. Every day he met with one to four engineers to help as needed. He also created an infrastructure tool to keep track of metrics for the overall program, then taught an administrator how to maintain it for everyone.
- Key milestones achieved: Reduced future development, factory, and warranty costs worth over \$6M by mentoring 57 engineers to certification. Skillsets involved reliability, systems, mechanical, electrical, manufacturing, and software development. He worked closely with engineers to meet both technical objectives and the company objective of 100% engineers trained within 18 months.
- Taught Design for Six Sigma methods to over 150 engineers, emphasizing Design for Reliability, Weibull Analysis, Measurement System Evaluation, and Design of Experiments.

# VI. Results and Impact

- Measurable outcomes: Reduced future development, factory, and warranty costs worth over \$6M by mentoring 57 engineers to certification on projects including reliability, systems, mechanical, electrical, manufacturing, and software development.
- Impact on the organization: Worked closely with engineers to meet their individual technical objectives as well as the company objective of 100% engineers trained and certified within 18 months.
- Comparison with others in similar roles: Jay finished everyone under his responsibility a few months early, then helped other departments. This helped meet the company goal.

# VII. Lessons Learned

- Key lessons learned: It is possible to make a dramatic change in a large organization within 18 months when the leadership fully supports it.
- Best practices and strategies: Get early success from the easiest person to show it can be done, then the second easiest, then the early majority to build momentum. Eventually the slowest and most reluctant in the hardest position will have peer pressure to catch up.
- Recommendations for program managers: Establish the infrastructure to track progress from the start. Keep meet time to a minimum to focus on what constraints exist now and what will come up next. A little foresight near the start can prevent major setbacks.



# VIII. Conclusion

- Achievements and impact: Jay Lewis established the infrastructure, built momentum, and finished his allocation of staff early to help rest of the department meet the company goal.
- Key takeaways: Start small and build momentum. Track progress in a way to see where the constraints are early and solve those before they become a problem.
- A cross functional organization can level up all engineers to use new technology, engage stakeholders, and foster a culture of adaptability that will lead to increased efficiency, growth, and performance to beat competitors to market.

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