

LIVING LEAN: BOB'S A-MAIZE-ING POPCORN

- Bob: Hi there, Jay. Thanks for making it over.
- Jay: Glad to be here—hey, who else is here already? The Super Bowl should be starting soon.
- Bob: Mike and Dave are in the den. I think we've got about 15 minutes before the kickoff. They're watching the commercials. Always something new!
- Jay: Sounds good. Hey, what's that smell? Is something burning?
- Bob: [*Runs to the kitchen*] Whoops! I thought the guys were supposed to be watching the stuff they brought. [*Frantically pulls on some oven mitts and slides out a tray of burnt mozzarella sticks and chicken wings*] Open the window!



Illustrations by Michael Twery

This case was prepared by Rebecca Goldberg (MBA '03) based on a project prepared by Robert Liebe (MBA for Executives, '12) under the supervision of Elliott N. Weiss, Ethyl Corporation Professor of Business Administration. It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Copyright © 2012 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. *To order copies, send an e-mail to sales@dardenbusinesspublishing.com. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation.* ◇

- Jay: [*Pops open a window and fiddles with the remote control for the ceiling fan*] That's a lot of smoke.
- Bob: Give me that. [*Reaches for the remote control and puts the fan on high speed*] Well, what are we going to eat now? Beer alone isn't enough. I've got to eat something, or my ulcer will act up.
- Jay: Listen, I don't think anyone wants to go out to the store again. What do you have in the house? Can we make some popcorn or something?
- Bob: Good idea. [*Closes the window now that the smoke has cleared*] I make the best popcorn this side of the Mississippi.
- Jay: How could you possibly know if your popcorn is the best?
- Bob: Because Malachi and I have popped a batch every day for the past month as part of his science project. For some reason, I haven't gotten tired of eating our research.
- Jay: What's the science project about? I've got to do something similar with Vicky next month, and I could use some ideas.
- Bob: [*Gets his popcorn equipment out and opens a cabinet to reveal 12 bags of popcorn from different manufacturers*] The science project is what we designed to demonstrate how to control several variables in a process to standardize and optimize the outcome. It's all the better for me that I enjoy eating the results.
- Jay: What does Sandy have to say about all this?
- Bob: She loves it. We always clean up the kitchen after conducting our top-secret activities. I usually cooked dinner anyway before we started this project because she worked late, and then she did the dishes—now it's easier for her because she gets dinner *and* a clean kitchen.
- Jay: You are a real treasure!
- Bob: Yeah, tell me about it. Anyway, we started the project by taking a look at the variables that we guessed would have the greatest effect on the outcome. We first looked at five variables, and we went back and forth about which ones were the most important. We wanted to design the project in the way we thought it would be most effective. When we first started talking about it, we looked at brand of kernel, thickness/density of pan bottom/lid seal tightness, popping medium (oil, air), gas or electric stove, and toppings.
- Jay: How would you even know where to start? That's not a very specific list. You could test those things forever and not come up with anything definitive. Don't science experiments isolate one or two things, so the outcome is more controlled?
- Bob: Yes, that's true, but Malachi enjoys debating the details, so we delved quite deeply into the details of five things on our initial list. First of all, we have an

electric stove and not a gas range. So we thought about this. We realized that our gas-versus-electric line item was more a matter of the ability to control temperature. For the purposes of this experiment, we realized that we could simply preheat an electric stove burner so that the popcorn pan was introduced to high heat fairly quickly the same as a gas stove. We also lowered the heat inside the popcorn pan by moving it to another burner that was not currently in use to duplicate the superior temperature control of a gas stove. Therefore, for the purposes of this experiment, we removed this variable from the list. Instead, we focused on what we thought was the most effective temperature.

Jay: I think I follow you. What did you find?

Bob: We discovered that it didn't matter how long it took the burner to heat up, so long as it reached a high temperature. We learned we needed to create an environment of high pressure and high heat. By heating the burner sufficiently and making sure the seal between the pan and its lid was tight enough we created the ideal conditions for popping corn. We also noted that control over the heat and pressure and the ability to adjust these conditions quickly were important. For instance, if we began to smell the popcorn burn or heard the popping rate slow down, we knew we needed to remove the pan from the heat source quickly to avoid burning.

Jay: You mean like how we just burned all the cheese sticks and chicken wings?

Bob: Exactly.

Jay: Did you rule out any of the other variables you mentioned in your initial list of five?

Bob: Well, we threw out the oil-or-air debate because we don't like air-popped popcorn.

Jay: I noticed that microwaves weren't in that list at all. Guess you don't like packaged microwave popcorn either?

Bob: You got it. That fake butter just doesn't do it for me.

Jay: So you made the choice to limit the experiment to oil-popped corn made on an unspecified stove.

Bob: You could say that, but we did end up listing butter, canola oil, and olive oil as three separate types of oil that we wanted to use as variables. So that line item changed.

Jay: That makes sense. What were you controlling the variables for—the best taste, or the least mess?