

Case Study – Decision by Private Sector Business Owner

Introduction

During the recent past, radically changing and extreme weather events have made a dramatic economic impact on the U.S. economy. Weather-related damages amount to \$20 billion dollars per year. Estimates vary, but up to 3.0 trillion dollars of the economy are affected annually by weather and climate events. Day-to-day exposure of these impacts has made 'weather' extremely popular.

Simultaneously with these occurrences, we have experienced explosive growth in the types of weather and climate products and services available in this country. Many factors have combined to fuel these rapid advancements, including the declining cost of technology, the ever increasing speed of communications, more 'free time' for innovation, and an accelerating demand for rich weather content from all segments of society.

But what is the source or who authors these specialized, value-added products? Who decides what product deserves production, and if production is selected, who will take responsibility to build and maintain it? With more and more demands being placed on taxpayer funds, is it sound, fiscal stewardship to expect the public sector to 'be all things to all people'? With the open market system that thrives in this country today, should not business entrepreneurial risk be rewarded with profit?

At one time, the government weather service was the nation's only civilian weather source. Government agencies were then the only ones that had the tools to collect the observations, move the data, assemble the information and develop and issue weather forecasts. The emergence of America's Commercial Weather Industry has drastically shifted that paradigm. Through more than 50 years of innovation and internal competitive pressures, America's Commercial Weather Industry has provided more and more value-added weather information, better tailored than ever before for individual users, businesses, industry, government and the media.

All of the services provided by commercial weather companies have been developed by investment of private capital in the face of risk, and one of these risks is that changes in the services provided by the government will disrupt the business environment in ways that reduce, or in the worst case eliminate, returns on these investments.

This HYPOTHETICAL case study is intended to illustrate this fact of life for commercial weather providers. Participants are asked to assume the role of an entrepreneur who has made significant investments to develop a new service that is almost ready for market, but has just discovered a government agency intends to provide a similar service.

The Case

Your company, **DEWDROP Corporation**, has expertise in wet weather flow applications and proprietary expertise (intellectual property [IP], patented) on radar applications in distributed hydrologic modeling. Each employee is a senior engineer, having a Ph.D., PE, and well over twenty years of experience (a high dollar payroll and benefits package). As the company's owner, project manager and principal investigator, you are directly responsible for all income-producing projects of the company, routinely a 50-hour per week endeavor. Your responsibility also includes managing the company's payroll, benefits, 401k plan, marketing and legal efforts (efforts which complete your 85-90 hour work week). All of the daily operational activities performed within DEWDROP are conducted through internal resources. No activity is outsourced. All new R&D is financed internally through gross receipts or with bank debt, personally guaranteed by you.

Recent wet seasons, causing a number of flash floods and mudslides (Lahars¹) across the Desert Southwest, have presented unexpected opportunities for DEWDROP. Emergency managers (EM) need day-to-day support in identifying these imminent threats, methods for risk evaluation, and suggested methods of mitigating the risks.

With modification to existing IP, you believe you can develop a suite of products that can accurately and reliably predict the imminent threat of flash floods and Lahars. Your analysis of the market potential among EMs, public works departments, and others for this type of product shows potential for a significant return, as either a web-based service requiring a large monthly subscription fee, or as a stand-alone software package that produces a large profit margin. The analysis assumed the National Weather Service (NWS) would continue to provide current flash flood watch/warning services which do not include predictions of Lahar risk, i.e. although your product also provides superior performance in delineating flash flood risks, your market niche is defined primarily by your ability to predict risks of Lahars, especially after a forest fire reduces the strength of the soil. The opportunity required significant capital expenditures to develop the new product lines, and you decided to proceed with the project by securing sizeable bank loans, which have been personally guaranteed using the equity on your home and in your children's college funds.

It is now twelve months after embarking into the direction of this new opportunity. Product development has gone well, and you are planning a marketing campaign to begin in two months. However, you have just learned that NOAA/NWS has exposed a new 'experimental product' for comment, nearly identical to yours. The NWS product is based on an analysis of the risks of a debris flow in areas recently burned by wildland fires using methods similar to those in your planned service, and the NWS intends to offer an "experimental" debris flow warning service based on these analyses for three counties – as it happens three of the counties which you have identified as most promising for sales of your planned service.

Outputs

Course participants are asked to put themselves in the position of the owner of Dewdrop Corporation. You must decide your next course of action, which may include options such as:

- Discontinue the project, terminate newly hired employees, and use remaining funds to promote existing products and services – hoping additional revenues will cover the additional debt service.
- Continue with the project as planned, realizing the optimistic market potential you once expected may not be waiting for you 'at the finish line.'
- Continue with the project but change your marketing plans to emphasize your product's superior performance on flash floods and ability to assess Lahar risks for *all* types of land (not just burn areas).
- Attempt to dissuade NWS from providing the "experimental" service by commenting on the proposed service during the public comment period, and encouraging others to provide comments supporting your view that the NWS service is an inappropriate use of taxpayer funds to duplicate a service available from the private sector.
- Attempt to market your service to the NWS itself by offering to license your IP to them. If you use this approach, think about how you should set your price to the NWS, e.g.:
 - Large enough to recover most of your considerable investment – largely eliminating your investment risk if the NWS accepts your offer, but making it less likely NWS will do so, or

¹ The term "lahar" is most commonly used to refer to mudflows and/or debris flows arising from volcanic activity, but is also used to apply to a broader variety of causative mechanisms including heavy rain and melting snow / glaciers.

- Small enough to be attractive to NWS – continuing your investment risk, but allowing you to market your product as “used by NWS.”
- Aggressively attack NOAA/NWS, e.g. by asserting that their service infringes on your IP rights or by applying R&D proceeds towards lobbying through political contacts for the removal of the competing product.
- Take another course of action.

Participants should be prepared to justify their decision – think of this in terms of a meeting with your employees explaining the direction you plan to take.

Ground Rules

A course instructor will be available for questions or added clarification, but in no case will he suggest a decision for you.

Issues:

The primary mission of the National Weather Service is the protection of life and property, and the enhancement of the national economy. One could argue that the "enhancement of the national economy" is to not compete with America's commercial weather companies. Others would state that this case study clearly falls under "... the protection of life and property". What are your views, and how do they impact your decision?

America's Commercial Weather Industry understands business and the risks associated with performing in an open marketplace, and are driven to produce a profit, year in and year out. Government agencies are not held to the same economic standards and pressures. The free enterprise system in America rewards those companies who achieve economic success while eliminating those who don't. Hundreds of commercial weather companies have failed to date. Future failures, if they are to occur, must not be caused by governmental competition. What are your views?