

THE ENTREPRENEURIAL ENGINEER:



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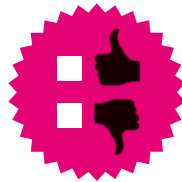
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*Previous: Garrett Camp,
Founder and CEO of
StumbleUpon.*

*Hack Day: brainstorming
at StumbleUpon.*

Photos courtesy StumbleUpon



Say you're in need of advice – a dinner recommendation, tips on the latest smart phone, ideas for a secluded get-away or a training class for your team–

CHANCES ARE YOU WOULD TURN TO FRIENDS, FAMILY, COLLEAGUES AND, DEPENDING ON THE QUERY, YOU MIGHT REACH OUT TO THEIR NETWORKS AS WELL. BUT WHAT IF FOLKS ARE “OUT OF POCKET,” OUT OF TOWN OR SIMPLY OUT OF REACH AT THE MOMENT YOU NEED AN ANSWER? OR WHAT IF YOU’RE FAR FROM HOME AND IN SEARCH OF AN INSIDER’S PERSPECTIVE?

Welcome to StumbleUpon.com, a discovery engine that brings word-of-mouth recommendations to the web by directing users to sites that their fellow surfers like.

“It’s a good place to go if you’re bored or doing research or looking for background on your latest movie script,” says Ken MacInnis, StumbleUpon’s senior platform architect. “In real life, you might talk to 100 friends to get ideas and recommendations, but in StumbleUpon, you just go to the site.”

Sounds simple now, but in 2001, when Garrett Camp started out as a master’s student at the Schulich School of Engineering, no such platform existed. “It was an itch that needed scratching,” says MacInnis. An itch to discover new sites and to share discoveries online. As part of his coursework in software engineering, Camp not only scratched the surface, but also probed interfaces for online collaboration, information sharing and evolutionary algorithms. And he laid the groundwork for a web-based system that combines users’ opinions with machine-generated recommendations based on people’s preferences.

Today more than 15 million people use StumbleUpon; at the onset it was four guys working in their respective bedrooms. Camp is now CEO. Geoff Smith became Chief Technology Officer, and Justin LaFrance and Eric Boyd left the company and went on to other things. LaFrance travelled the world and climbed Mt. Kilimanjaro in Africa; Boyd founded X Prize Cars and Sensebridge, a Toronto- and San Francisco-based research and collaboration group that works with human-machine interfaces and designs wearable electronics.

When Camp graduated in 2006 with his master’s degree in software engineering, StumbleUpon was ripe for launch. Instead of looking for a job, he went in search of investors. Four years ago, at age 28, Camp earned a spot on MIT Technology Review’s TR35, a list of innovators under the age of 35. Now, more than 50,000 advertisers promote their goods and

THE ENTREPRENEURIAL HABIT



Shelly Weinig, professor of engineering and manufacturing at Columbia University, and one of the first Americans to open a manufacturing plant in Japan, believes every salient enterprise has a unique story. In 1957, Weinig founded the Materials Research Corporation (MRC) to supply materials and equipment to the semiconductor and computer industries. In 1970, it went public on the American Stock Exchange and 1989 was sold to Sony. He retired as Vice Chair of Engineering and Manufacturing of Sony America in 1996 and is now an adjunct professor at Columbia University, where

he teaches "The Manufacturing Enterprise," a course designed to help engineering students develop business plans and prepare ideas for market.

He shares some tips from five decades as an engineer, entrepreneur and educator.

1. PUT YOUR WHOLE SELF IN

You need a commitment of 100 percent. The first thing you have to do is look in the mirror. Assess your people skills. Then you can do something about it.

2. KNOW WHEN TO ASK FOR HELP

There are many folks who are very capable who feel that asking for help is an admission of weakness. If there is help to be gotten, let's get it. Time is

services on his platform. Stumblers browse the web using the personalized engine, mark sites with a "thumbs up" or "thumbs down," make connections based on common interests and share their findings through StumbleUpon or social media tools like Twitter and Facebook.

A decade after the tech bubble burst, information technology and software-centric start-ups constitute one of the faster growing areas of entrepreneurship, on the global scale and in Canada. Since 2002, the technology sector has grown at nearly twice the rate of the country's economy. Tech ventures represent 6.5 percent of Canadian businesses (after retail, finance and construction) and account for almost 9 percent of the growth of the GDP since 2002.¹ In the throes of the economic crisis, entrepreneurial performance in Canada grew steadily. Ten percent of Canadians run their own business and nearly

30 percent sell their goods and services outside of Canada. Active ventures and entrepreneurial intentions both rose in 2009 (latest survey data available). Alberta boasted the highest percentage of the population – more than 10 percent – with the intent of starting a business.²

Education and entrepreneurship go hand in hand. Fifty-one percent of workers in the software and computer services sub-sector hold a university degree, compared to the national average of less than 25 percent.³ Personality also figures in. MacInnis cites Camp's insatiable curiosity and "info-voraciousness" as keys to his ongoing success, in the entrepreneurship arena and in water-cooler conversations. "If I said I went sight-seeing, he'd tell me about the new blimp-based sightseeing company that's doing tours around San Francisco."⁴



*Hack Day: brainstorming
at StumbleUpon.
Right: The games room.*

Photos courtesy StumbleUpon

more valuable than money. You can always get more money. The best help that I knew how to get – fast, cheap and meaningful – call up a salesperson, someone who visits others companies doing not-too-dissimilar business. Call up a former professor. They have connections.

3. KEEP UP YOUR CURIOSITY

If you're curious, you're going to keep learning. If a customer buys something from you (or visits your site), ask

questions about it. Why? How? When? How often? Start a conversation and follow through.

4. BREAK AWAY FROM “SILO MODE” AND “FOUNDER’S SYNDROME”

Some entrepreneurs are great at developing products and establishing businesses but they get overwhelmed when they become responsible for everything: accounting, marketing, selling and manu-

facturing. They need to make the transition or they'll end up destroying the new venture or getting replaced by the investors. In other cases, individuals do make the transition and then become paralyzed and can't allow the ventures to grow. These two behaviour patterns are extremely common but little is said about them in discussions about entrepreneurship.

5. MAINTAIN PERSPECTIVE

Without humour, we have nothing.

6. DO EVERYTHING AND UNDERSTAND EVERYTHING

You can't set up fences. You have to be able to quickly change hats, you cannot be stuck on one thing. If there's a problem in accounting, you can't say, "But, I'm a computer person, I'm not an accounting person." You have to learn new skills to be able to communicate in that language.



The kegerator

Photo courtesy StumbleUpon

Camp, who decamped from Calgary to San Francisco on his “second or third visit,” put his classroom learning into practice. These days, he adheres to theories of entrepreneurship that mirror his product: keep searching, accentuate what works, build networks and share information. Simply stated, “Look at the hottest companies and see who’s investing in them.” He keeps an eye on what Google and Twitter are doing and monitors blogs like TechCrunch, Mashable and ReadWriteWeb.

When he needs a sounding board, Camp does not circulate a question via Twitter or select a topic from StumbleUpon’s categories; he reaches out to his inner circle: people on his board or “a friend who’s five years older than me, but has three companies.” Camp cultivated his network, more than 7,000 followers on Twitter [<http://twitter.com/GMC>], by showing up at tech meet-ups. His advice: “Be friends with one person, get to know them well and then you don’t need to work the room.”

Camp met one angel investor who led him to others, so it is no surprise that he initiates social networking with face-to-face contact and uses e-mail, Facebook and larger events for follow up. StumbleUpon hosts several company-oriented parties throughout the year to reinforce existing connections and cultivate new ones. The casual vibe invites people to mingle in a business environment without the stress of sealing a deal or making a primo connection on the spot.

How does StumbleUpon maintain its entrepreneurial spirit among a staff of 65 (up from 34 a year ago and 12 in 2006)?

The platform stays nimble by talking to users about interfaces and messaging and by inviting staff to have a say

in what comes next. According to StumbleUpon’s senior product marketing manager Melinda Chung, “Everyone shares their ideas.” Case in point: Hack Day, a full day for the StumbleUpon staff to break into heterogeneous teams to brainstorm and make prototypes for improvements to the platform. Premiered in February 2011, Hack Day gave teams six hours of building time and the opportunity to present prototypes at the end of the day.

Hack Day itself is the outgrowth of another in-house brainstorming mechanism. In November 2010, marketing communications manager Katie Gray introduced the Right Brain Committee, a monthly lunchtime gathering for product managers, the business team and a few engineers. Food is provided, all ideas are fair game and negative attitudes are not tolerated. In the brainstorming sessions, naysayers are shot down with resident Nerf guns (engineers keep them on hand for stress-reduction). Workplace playthings include a kegerator (think of a keg inside a refrigerator) and an air hockey table. If employees are encouraged to hone their reflexes, they are also pushed to be part of the in-house culture of testing. Three to five staffers typically have a hand in running unannounced tests – on email subject lines to platform features – that last anywhere from a half day up to two weeks.

“Garrett, more than anyone, is a proponent of small and individual brainstorming,” says Chung, who is invested in building new ways to continue to provide “that serendipitous amazement that people enjoy.”

Grassroots participation and word-of-mouth-style interaction are an integral part of the culture Camp inspires. “He still wants to write code and come up with screenshot ideas and mock up things,” says MacInnis. The founder and CEO is the only StumbleUpon staffer with his own office (everyone else sits in on open-plan seating) but otherwise maintains a low profile among the greater StumbleUpon team.

“If you were to be sitting down in a room of 60 of us – you wouldn’t be able to pick him out,” says MacInnis, “even if I gave you 20 guesses.”

7. THROW AWAY THE MARKETING CLOAK

Everyone likes to think they have a real fix on marketing. They think it's packaging and advertising and newsletters. It's more in line with Wayne Gretzky's thinking when he pointed out the difference between knowing where the puck is now and where it's going to be. The real marketing concept is: Where is this industry or service going?

8. BUILD UP A HELL OF A BIG NETWORK

There are a lot of people who enjoy conversing, helping, displaying what little knowledge they may (or may not) have.



StumbleUpon mobile phone app

Photos courtesy StumbleUpon

Laura Silver is a freelance writer whose work has appeared in the *New York Times*, *Popular Science* and on *National Public Radio*.

¹ Industry Canada. Canadian ICT Sector Profile. Information and Communications Technologies Branch, August 2009 [http://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html]; Canadian Entrepreneurship Status 2010, Prepared by the Fondation de l'entrepreneurship, July 2010, presented by the Business Development Bank of Canada.

² Canadian Entrepreneurship Status 2010, Prepared by the Fondation de l'entrepreneurship, July 2010, presented by the Business Development Bank of Canada.

³ Industry Canada. Canadian ICT Sector Profile. Information and Communications Technologies Branch, August 2009

⁴ Airship Ventures <http://www.airshipventures.com/>

TO MARKET, TO MARKET: GREAT FEATS IN CANADIAN ENTREPRENEURSHIP



FULLER BRUSH

First Prototype: 1906

Massachusetts, United States

Nova Scotian Alfred C. Fuller started his custom-made brush line on a visit to his sister's house and set up these guiding principles: *Make it work. Make it last. Guarantee it no matter what.*



SNOWBLOWER

First Prototype: 1925

Quebec

Arthur Sicard modeled his self-propelled snow repositioning system on the mechanics of a grain thresher.



PAINT ROLLER

First Prototype: 1940

Toronto

Norman Breakey came up with the time- and back-saving idea but did not turn a profit from it. Other fast rollers tweaked his design and sold the cylinder-shaped tools as their own invention.



BLOODY CAESAR

First prototype: 1969

Calgary

Walter Chell designed a cocktail to herald the opening of a new restaurant on the site of what is now the Westin Calgary. The ingredients: Clamato (clam juice with tomato juice), Worcestershire sauce, hot sauce and vodka served in a salt-rimmed glass with a celery stalk and a slice of lime. Chell called the concoction a Caesar to honor his Italian ancestry, plus the beverage's components flaunt the colours of the Italian flag.



TRIVIAL PURSUIT

First prototype: 1981

Montreal

Inventors Chris Haney and Scott Abbott took on partners and formed the Horn Abbot company, which issued an initial run of 1,100 copies of the game.

BLACKBERRY

First prototype: 1999

Waterloo

Mike Laziridis. Research in Motion introduced the first BlackBerry device as a two-way pager with a monochrome screen.



AN ENTREPRENEURIAL SOLUTION FOR SHARING SCIENTIFIC DATA



It's a vision for a company that could change the way environmental research is conducted. Geospatial Cyberinfrastructure for Environmental Sensing, or GeoCENS, is a \$1-million initiative to create an interactive web-based portal for scientific data related to climate, water and wildlife. It will enable remote analysis of data and social networking within the biogeoscience community.

Scientists typically use their own ground-based sensors for data collection and environmental monitoring. GeoCENS means scientists will be able to contribute and share research data remotely. They will have access to two- and three-dimensional graphics, historical data

and real-time information all broken down into specific geographical areas.

The project team includes Steve Liang and Caterina Valeo from the Schulich School of Engineering, Edward Johnson from the University of Calgary's Biogeosciences Institute and John Pomeroy from the University of Saskatchewan. GeoCENS is sponsored by Canada's Advanced Research and Innovation Network (CANARIE) and Cybera, a not-for-profit organization in Alberta that facilitates innovation through the use of cyberinfrastructure.



JUST HOW CRAZY ARE ENTREPRENEURS?

The *New York Times* published an article recently about an entrepreneur, Seth Priebatsch, and described what it called his "hypomaniac" attributes: an elevated mood, obsession with one idea, little need for sleep, massive self-confidence.

The article implies that entrepreneurship is an inbuilt trait somewhere to the right of normal, and just on the edge of manic illnesses. It cites Steve Jobs and Henry Ford as other examples of this type.

This is a familiar argument: that entrepreneurs are born not made, and has also been applied to "prodigies" and "geniuses" in other spheres. But is this a fair reflection of entrepreneurs, and if so, what does it imply for schemes which aim to encourage or teach entrepreneurship?

What does an entrepreneur look like?

Imagine an entrepreneur. What do they look like? What do they sound like? Perhaps you think of one of the dragons from *Dragons' Den*, or Richard Branson. It is tempting to extrapolate from these highly visible examples and get the same impression of entrepreneurs as a manic, bombastic group.

However, there is a selection bias at work here: not all entrepreneurs seek public attention. Those people with the job title "entrepreneur" are those who seek publicity and attention for themselves. But thousands of businesses are started every year, and hundreds of venture capital bets placed, and we don't know all their names.

Meeting with a successful serial entrepreneur a couple of weeks ago, he described different motivations in his peers: for money, for the technical challenge, for the buzz.

The pitch

In order to successfully secure investment, especially venture capital, you will need to pitch the idea. Those who can sell with confidence and self-belief are more likely to be funded. This makes logical sense: if you can't sell to the investors, how are you going to convince customers and make money? How are you going to inspire your team?

The team

But that's a "hygiene" factor – a condition of entry. To be distinctive, you also need a great idea, and a market to match, but more than that, many venture capitalists will tell you that they back the team. One guy is not usually enough – you need a balance of skills in the team to increase the chances of success. You want people who understand the product and their customers, who can deliver to deadlines, who can take care of the money.

Rewriting the stereotype

My point is that this concept of the manic entrepreneur can be very damaging. In a recovering economy, many people would like to inspire more entrepreneurs. If the only model held up is one of bombastic arrogance, then those who don't identify themselves with this personality will be put off, and feel they can't succeed. This could be an especially harmful notion when it comes to inspiring women to start businesses.

How to pitch with confidence can be taught, and will improve with practice – as long as you are obsessed with your idea. And everyone is obsessed by something.

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RESOURCES

The Alberta Innovates Connector is a free service that puts entrepreneurs in contact with business strategies, potential investors and extensive resources in the province. albertainnovates.ca/connector

Innovate Calgary works with researchers, entrepreneurs and companies to accelerate the commercialization of emerging technologies and support and facilitate the creation and growth of technology-based companies in southern Alberta. innovatecalgary.com

Canada Business provides a wealth of information on government services for entrepreneurs through centres in each province and territory. canadabusiness.ca

The Ewing Marion Kauffman Foundation is the world's largest private foundation dedicated to fostering entrepreneurship, based in Kansas City, Missouri. kauffman.org

National Angel Capital Organization, a non-profit association for angel investors, provides referrals and guidance to entrepreneurs. angelinvestor.ca/For_Entrepreneurs.asp

The Research Innovation Commercialization (RIC) Centre helps entrepreneurs turn ideas into products and services. riccentre.com

MOTIVATIONS OF MALE AND FEMALE ENTREPRENEURS



Startup company culture appealed to me



Wanted to capitalize on a business idea that I had



Wanted to build wealth



Have always wanted my own company



Working for someone else didn't appeal to me



Co-founder encouraged me to become a partner and start our company *



An entrepreneurial friend or family member was a role model



Developed a technology in a laboratory environment and wanted to see it make an impact



Couldn't find traditional employment



Female
Male

Answers based on least to most important.

* Statistically significant gender difference at .01 level

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