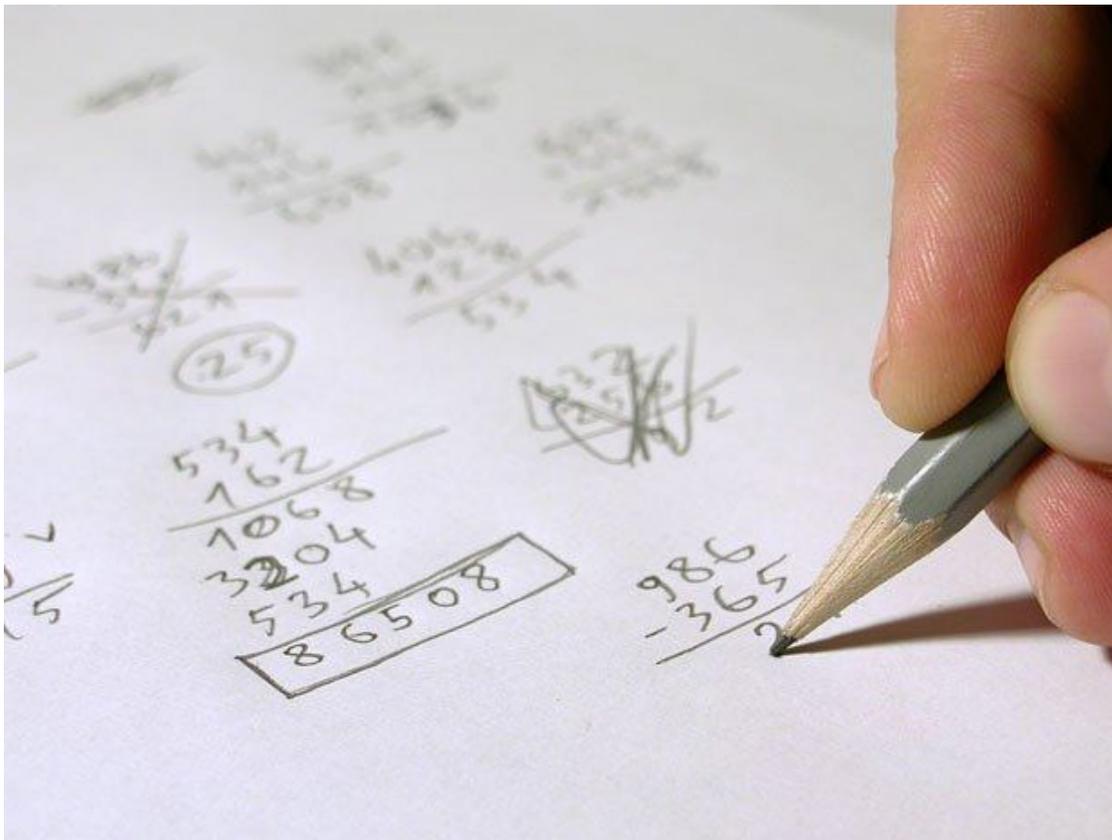


# FINANCIAL POST

## FP ENTREPRENEUR

### How a mathematician's musings can help your business

[Brad Cherniak](#) | 02/12/13 | Last Updated: 02/12/13 9:29 AM ET



*Fotolia The principles that propelled mathematician Edward Frenkel to where he is today can also be applied by entrepreneurs.*

Sometimes the best lessons for business owners come from outside business. And while the lessons I lay out here may be somewhat esoteric, they can help entrepreneurs be successful.

Edward Frenkel, a professor at the University of California, Berkeley, and one of the world's top mathematicians and mathematical physicists, is working on the groundbreaking Langlands Program, pursuing a grand unified theory of mathematics. I have distilled some of his key tenets as laid out in his recent best-selling autobiographical book, [Love & Math](#) and from conversations with him.

Frenkel's start was not particularly auspicious. Born in 1968 on the outskirts of Moscow under Communist rule, personal progress was largely a matter of government discretion. As a Jew, many doors were slammed shut for Frenkel and his family.

The principles that propelled Frenkel to where he is today — a world-renowned academic and best-selling author, as well as a filmmaker and holder of many awards, honors and distinctions — can also be applied by entrepreneurs:

**Don't expect an easy, linear path to your goals.** There is no step-by-step template for success. You must make decisions under high uncertainty, and gamble at various points. Be prepared to change trajectory as needed, and work with what resources you have been able to amass.

Rather than sulk over being shut out of the leading math program at Moscow State University due to its discriminatory admissions policies, Frenkel studied at the Moscow Institute of Oil & Gas. Later, he obtained an exit visa (no small feat) and moved to the United States alone at age 21 to join Harvard's department of mathematics.

**Expect fairness and be forever disappointed.** Frenkel scaled a 20-foot security fence and snuck through a kitchen to sit in on Moscow State University courses to fill the gaps in his education. "You need to park your pride and do what you need to do. They didn't let me in through the front door, so I flew in through a window," he said.

**Fight, compete and win with knowledge.** Devour information; few do, so it is a real competitive advantage. Frenkel recommends students and businesspeople alike seek out all sources of information to build their body of knowledge and insight.

"It is a more fruitful exercise than simply trying to discern the conventional wisdom from the crowd. If you don't, you are at best a me-too rather than an innovator," he said.

And it is not always clear what you should be researching. Too much focus can limit the most important and spectacular insights and innovations that come from unexpected places."

An obscure Japanese paper Frenkel stumbled upon in his search for insights helped him think through a particularly complex problem. By turning his formulas inside-out, he was able to solve them in a powerful and universal way that catapulted his career to new levels.

**Don't expect anyone to tell you what you should do.** Despite the obsession with social networking, collaboration and openness, entrepreneurs must be self-propelled. Don't obsess over finding a mentor. Focus on your task, show initiative and skill, and they will tend to find you.

Some of Frenkel's best mentors and early collaborators were drawn in by his work and innovations in math, rather than by him seeking out help. "A successful mentorship relationship is a two-way street, with the mentor gaining as much as the mentee," he said.

**Be able to present yourself and your ideas — and defend them.** At various times you have to stand and defend your concept or your business. The crowd may be indifferent, or even hostile — or worse, smarter than you. You need to get past these gauntlets as unbruised as possible, learn from them, and even gain allies in the process.

Frenkel learned to do that at the Gelfand Seminar (run by and named after the patriarch of the Soviet mathematical school), a long-running weekly gathering of the local community, and at the Séminaire Bourbaki, the longest-running gathering of the best minds in mathematics from around the world.

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So how should Canadian business owners apply these insights to their businesses?

First, don't obsess about whether your business or operational strategies are necessarily the "right" ones — there is no such thing. Worry more about, and focus directly on, what you are doing today under the specific, unique facts of your situation.

Analyze your business and its financial results objectively and exhaustively. React to facts "on the ground" in your business. Kevin O'Neil, partner at Sapient Capital Partners says, "don't get unduly distracted over whether someone else knows the 'right' way, that you are somehow missing."

Second, while you should be analytical and seek input, at the end of the day, business is about taking risks. No expert advice or template will change that.

If all this becomes overwhelming or a burden, it may be a sign it's time to exit your business, or at least start doing some planning around the idea, to avoid making poor decisions and creating a vicious circle for yourself and your business.

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