

The Path from an R&D Idea to a Product

Georgios Konstadinidis

High Performance CPU/ ML Accelerators Chip Design Consultant
(ex SUN Microsystems/Oracle/Google)

July 17, 2026

Outline

- What is the procedure and the University infrastructure requirements to materialize an R&D idea to a product?
- What should be the relationship between the University and the Industry?
- Financial and legal hurdles and requirements. IP protection and commercialization
- Funding stages and path to a successful and socially responsible business development

University Infrastructure Requirements

- **Requires a University IP evaluation, Legal & marketing team that will provide:**
- **New idea assessment**
 - Publication vs proceeding to IP protection
- **IP protection management**
 - Intellectual Property Agreements, Data management
- **Market outreach**
 - Market research, collaborators, early idea adopters
- **Licencing**
 - In exchange of royalties or other compensation
- **Commercialization**
 - Marketable product, regulatory approvals, marketing, sales, distribution
- **Revenue sharing**
 - Establishes % of revenue sharing between the University and the Inventors

University & Industry Relationship

- Basic research vs industrial applications
 - Basic Research is fundamental and the priority
 - It offers new possibilities even if the applicability is not immediately obvious
- Collaboration with the Industry
 - Parallel path with basic research
 - Offers the opportunity to solve practical problems
 - Opportunity for funding, and job opportunities
 - Possible conflict of interest
- Keep always in mind the impact to society
 - Is it useful?
 - Is it ethical?
 - Can it be used for wrongdoing? What are the protective guards against this?

Exploring New Ideas

- Scope
- Timeline and results
- Funding
 - The funding needs to be attached to agreed milestones

IP Protection & Publications

- Submit patent well before publication
 - Published ideas cannot be patented afterwards!
- Provisional Patents
 - Temporary application establishing an early filling date
 - offers IP protection for a year at minimal cost (Patent Pending)
 - Provides time to develop a more mature idea and saves cost
- Utility Patents
 - Official patent submission reviewed by the Patent Office
 - Needs to be filed within a year from Provisional Patent, or up front
 - Takes 6-7 months to prepare, 2-3 years to get awarded
 - Cost 4K-10K USD
 - Covers only the country this patent was submitted
- Patent Cooperation Treaty (PCT)
 - Temporary International Coverage for 30 months
- International coverage
 - Very expensive (~100K USD!)

Market Research

- What is the need for such a product
- Is the timing right?
- Is this going to be a lasting product?
- What is the competitive landscape?
- Licencing vs new product introduction?
- What are the expected revenue and gross margin targets?
- Who are the key potential collaborators?

Business Outreach

- Make sure all required patents are filed
- Prepare some non-confidential high level introductory slides
- Non Disclosure Agreements (NDA)
- Prepare some more in depth presentations accompanied by NDAs
- Some are customers, some competitors, some potential collaborators - Choose wisely

Business dos and don'ts

- Do not compete with your customers. Obvious?
- Do not over promise and don't undeliver. Obvious?
- Need a good combination of CTO and CEO who need to be complementary to each other
- At first need to cover all technical, business, EDA, admin tasks with a small multitasking and efficient team.
 - Avoid growing the business too fast
 - Apart from the financial burden, speed of execution is key. Small teams are more agile
 - Critical balance of resources and deliverables
 - Being self funded at first is key
 - Develop the business to a critical point before talking to VCs to increase valuation
- In collaboration with your customers create a development plan that allows for a parallel path that proves the concept but reduces risk for the customer
 - Eg co-development of a test chip
 - Plan for resources build up for future support
 - Describe the long term strategy to gain your customers support

Commercialization

- IP licencing
 - IP licencing is simpler and faster but with less revenue
 - Licencing Agreement negotiations
 - Collaboration framework
 - Development and Commercialization milestones
- Spin off/ startup - full product development
 - Startup bring up can be very challenging but very rewarding
 - A lot of risk involved, requires a huge infrastructure development, fast execution and the right business calls. - Not for the faint of heart..

Startup investment stages

pre-seed

Idea validation, market research
Self funded \$10K-\$100K

seed

Achieve product market fit, early traction. Angel investors, micro VCs
\$100K-\$6M

Early stage
Series A & B

Series A: Focus on establishing a scalable profitable business model.
Series B: business expansion, increasing market share, hiring key teams. Funded by VCs, private equity

Late stage
Series C and beyond

Rapid expansion to new markets, scaling operations
Funded by later stage VCs, private equity, hedge funds

Exit phase

Liquidity for founders, employees, early investors
Acquisition: purchases by a larger corporation
IPO(Initial Public Offering) transitions to a publicly traded company

Summary

- Bringing a new idea to market is very challenging but very rewarding
 - The University should play a fundamental role in bringing new ideas to the market in addition to fundamental research
 - This requires a full IP evaluation, legal and marketing team established at the University
- IP protection is key and needs to be balanced vs publications
- Product and Market evaluation, potential collaborators
 - Non Disclosure Agreements (NDA)
 - Some are customers, some competitors, some potential collaborators - Choose wisely
- Think always the impact to the society
- IP licencing
 - simpler and faster
- Startup - new product introduction:
 - Lots of hurdles, risky, but can be very rewarding