Successful Entrepreneurship for Microsystems

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Start-up “Administrative” Checklist

- Company
  - Name, Domain Name (search)
  - Address, phone, email
  - Web hosting, Domain registration, Website
- Business License(s) – city, county,..
- Business Structure - Incorporation
- Bank Account(s)
- Financial
  - Record keeping, Accounts, Payables,..
  - Funding
- Intellectual Property
Business Structure

- Sole Proprietorship
- Partnership
- C-Corporation
- S-Corporation
- LLC (Limited Liability Company)
<table>
<thead>
<tr>
<th></th>
<th>C Corp</th>
<th>S Corp</th>
<th>LLC</th>
<th>General Partnership</th>
<th>Sole Proprietor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owners have limited liability</td>
<td>☑️</td>
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<td>☑️</td>
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<tr>
<td>for business debts and obligations</td>
<td>☑️</td>
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<tr>
<td>Created by a state-level registration that usually protects the company name</td>
<td>☑️</td>
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<tr>
<td>Business duration can be perpetual</td>
<td>☑️</td>
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<td>May have an unlimited number of owners</td>
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<td></td>
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<tr>
<td>May issue shares of stock to attract investors</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owners can report business profit and loss on their personal tax returns</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Owners can split profit and loss with the business for a lower overall tax rate</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Permitted to distribute special allocations, under certain guidelines</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Not required to hold annual meetings or record meeting minutes</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
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</table>
Why Incorporate?

Advantages

- Owners protected from personal Liability
- Unlimited Life
- Credibility – “Inc.” or “LLC”
- Transferability of Ownership/Shares
- Ability to raise Investment Capital
- Corporations have a reliable body of legal precedent to guide owners and managers
- Best vehicle for eventual IPO
- Tax benefits and flexibility under some circumstances
- Deductible expenses

Disadvantages

- Require Annual meetings, and Minutes
- Owners and Directors must observe certain formalities
- Expensive to set up
- Require periodic filings with the state, and Annual fees
- Double Taxation

Ref: [www.entrepreneur.com/article/77730](http://www.entrepreneur.com/article/77730)
[www.sba.gov](http://www.sba.gov)
Protecting your Invention

- Trade Secrets
- Patents
- Register Trademark with USPTO (US Patents & Trademarks office)
- Copyright ©
Utilizing Trade Secrets to protect your Invention

➢ Valuable information that is maintained confidentially.
   ➢ Information such as a method of production, technical data, and general or specific “know-how” can be protected as a trade secret, so long as such information has:
     ➢ independent economic value, because:
       ➢ it is not generally known and
       ➢ is protected by reasonable secrecy procedures.

➢ Uniform Trade Secrets Act

➢ A trade secret exists as long as it is not generally known and the owner of the trade secret employs reasonable efforts to maintain the secrecy of the trade secret.

➢ It is not possible to maintain a trade secret and obtain a patent on the same subject matter

➢ A basic trademark costs about $325 per “class” at filing, along with legal fees.
   ➢ It’s worth it to protect your brand.

Ref: S. Gonzalez
Utilizing Patents to protect your Invention

- It’s a “Negative Right”…the government endows you with the exclusive right to exclude others from making, using or selling your invention
- Covered by Patent Act
- Invention must fall within several classes of subject matter
  - Utility, Design or Plant
  - Protection of Design or Devices
  - Protection of Processes and Manufacturing
- Invention must be:
  - New or Novel
  - Useful
  - Non-obvious to a person having ordinary skills in the art of the invention

Ref: S. Gonzalez
Steps towards Patenting your Invention

- Patent Search
- Draft Patent Application
- File
  - “Patent Pending” status
- Prosecution
  - USPTO does search
  - USPTO “Office Action”
  - Your Response, including “claim amendment” if required
  - Notice of “Allowance”…on your way to a Patent
  - Final Office Action …option to re-file
- Issue Fee
  - Upon Notice of Allowance
  - Patent granted in 1-3 months

Ref: [www.neustel.com/Patent-Inventions](http://www.neustel.com/Patent-Inventions)
Steps towards Patenting your Invention

...some complications

- **First to File** (Europe, now also in US) vs. **First to Invent** (was in US)
- 1 year to file
- General rule – file in US *before* disclosing
- Low cost “Provisional” Patent filing
  - Establish early filing date
  - File full Patent app within 1 year

Ref: Joe Hadzima, Boston Business Journal, MIT
Licensing Mobile Apps

- Software code can be copyrighted
- Mobile Apps that change the way a device performs an operation could be patentable
- Challenge – short lifecycle
  - File “Provisional” patent app – good for 1 year
  - Then decide whether to file for a patent
- “methods or processes for producing a useful, concrete, and tangible result”
- “Open Source License” you give the right to someone to use your source code under some Terms and Conditions.
  - You have no control or leverage!

Ref: S. Gonzalez
Licensing your IP

- At some point in the life of your company you may want to “License” your invention to a “Strategic Partner”
- A lump-sum payment
- A “Royalty” payment (e.g., ~2-5% or unit selling price)
- Some issues:
  - The Terms:
    - Exclusive or Non-Exclusive
    - Right to sublicense
  - Warranties
  - Indemnities
  - …
- Valuation

Ref: S. Gonzalez
Fabless Company Lifecycle and Phases

**The Start-up /Small Co. Phase**
- Company Formation
- Funding
- Target Product
- Implementation Methodology
- Design
- Target Customer(s)
- Process Technology
- Package
- Cost
- Exit Strategies...

- Few Designs
- Revenue ≤ $100M

**Growth Phase: Mid-size Co’s**
- 10’s of Designs
- Revenue ≤ $1 B

**Top-tier Phase: Large Co’s**
- MANY Designs
- Revenue ≥ $1 B

- Altera [$1.954B]
- Broadcom [$6.589B]
- Marvell [$3.62B]
- MediaTek [$3.907B]
- nVidia [$3.543B]
- Qualcomm [$10.991B]
- ST-Ericsson [$2.3B]
- Xilinx [$2.31B]
- AMD [$6.494B]
- ...
- ...

Source: GSA
Circa 2011
A few case-study examples

Entropic Communications
2010 Revenue: $210M
Cable-connected home entertainment, MoCA

Qualcomm
Founded: 1985  IPO: 1991
2010 Revenue: $10,991M
CDMA/Wireless Chip-sets and Licensing

Silicon Image
Founded: 1995  IPO: 1999
2010 Revenue: $191M
Digital Video interface, HDMI

Rambus
Founded: 1990  IPO: 1997
2010 Revenue: $323M
Memory interface Licensing

# of Years from founding to annual Revenue Level

<table>
<thead>
<tr>
<th>Years</th>
<th>$50M</th>
<th>$200M</th>
<th>$1B</th>
<th>$10B</th>
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<tbody>
<tr>
<td>Entropic</td>
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<tr>
<td>Si Image</td>
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<tr>
<td>Rambus</td>
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