Equity Compensation

Rules of thumb, guidelines, conventional wisdom & other considerations

Frank Demmler
Frank Demmler

• Professional
  – Managing Director, Riverfront Ventures (2013-2018)
  – Vice President, Entrepreneurial Services, Innovation Works (2005-2018)
  – Fortune 200 job, right-sized out of job (pre-1984)

• Academic
  – Adjunct Professor of Entrepreneurship, CMU (1987 - present) (full-time 2003-2005)

• Education
  – Princeton, UCLA & Harvard Business School

• Awards & Recognition
  – Lifetime Achievement Award from the Pittsburgh Venture Capital Association
  – Finalist, Ernst & Young Entrepreneur of the Year, Supporter of Entrepreneurship
  – Gerald E. McGinnis Adjunct Professor of Entrepreneurship at CMU
Why do I care about equity compensation?

• If you are a founder, you have to decide how to share the “Founders’ Pie”
• If you are a recruiting someone, you have to decide how many stock options to offer a prospective hire
• If you are a prospective hire, you have to evaluate the number of stock options you’ve been offered
Founders’ Pie

Getting started correctly is critical!
When you start a company, you have to decide who owns what.
Founders’ Pie

Conventional Wisdom

• Count the number of founders
• Divide the number of founders into 100
• That’s the “fair” percentage for each founder

<table>
<thead>
<tr>
<th>Founders</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50.0%</td>
</tr>
<tr>
<td>3</td>
<td>33.3%</td>
</tr>
<tr>
<td>4</td>
<td>25.0%</td>
</tr>
</tbody>
</table>
Conventional wisdom is wrong, and could be fatal
Think about 2 founders, what if?

• One jumps into the company & the other keeps his job, “helping” at night & on weekends

• Company is doing well. One founder happy with current income, the other wants to change the world.

• Company needs money. One founder puts it in, the other doesn’t.
Think about 2 founders, what if?

• One jumps into the company & the other keeps his job, “helping” at night & on weekends

• Company is doing well. One founder happy with current income, the other wants to change the world.

• Company needs money. One founder puts it in, the other doesn’t.
Slicing the Founders’ Pie

Frank Demmler
Slicing the Founders’ Pie

• How much stock ownership should go to whom?
  – Share the wealth with those who help to create the value and thus the wealth
    • To date
    • Into the future
  – Make sure the company prospers and grows thus creating a huge, shared pie
Considerations of Value

Contributions in certain areas are of particular value to a venture.

- Idea
- Business model preparation
- Skills, experience, track record, contacts
- Commitment and Risk
- Responsibility

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Suppose: University Spinout – 4 founders

- **Founder #1**: Inventor – senior faculty, won’t leave the university, created university-patented IP
- **Founder #2**: Business guy (MBA?) – jumps in and responsible for getting things done
- **Founder #3**: Post-doc – knows how to make the technology work, joins the company when funded
- **Founder #4**: Lab tech – happened to be in the right place at the right time
# Founder Relative Contribution

## Absolute Scores (1-10)

<table>
<thead>
<tr>
<th></th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
<th>Founder 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Idea</strong></td>
<td>7</td>
<td>10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Business Model</strong></td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>1</td>
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<tr>
<td><strong>Domain Expertise</strong></td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td><strong>Commitment &amp; Risk</strong></td>
<td>7</td>
<td>0</td>
<td>7</td>
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</tr>
<tr>
<td><strong>Responsibilities</strong></td>
<td>6</td>
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<td>6</td>
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</tbody>
</table>
# Founder Relative Contribution

## Importance of Each Component

*Absolute Scores (1-10)*

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
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<tbody>
<tr>
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<td>Responsibilities</td>
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</table>
# Founder Relative Contribution

**Founder Contribution to Each**

*Absolute Scores (1-10)*

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Business Model</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Domain Expertise</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Commitment &amp; Risk</td>
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<td>0</td>
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<td>6</td>
<td>0</td>
<td>6</td>
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Founder Relative Contribution Compiled Assessments

*Absolute Scores (1-10)*

<table>
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<tr>
<th></th>
<th>Weight</th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
<th>Founder 4</th>
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<tbody>
<tr>
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<td>10</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Business Model</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Domain Expertise</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Commitment &amp; Risk</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Responsibilities</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## Founder Relative Contribution

### Founder Score per Component

**Weighted Scores (1-10)**

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
<th>Founder 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea</td>
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<td>70</td>
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<td>21</td>
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<td>7</td>
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<td>42</td>
<td>28</td>
<td>42</td>
<td>28</td>
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<tr>
<td>Commitment &amp; Risk</td>
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<td>0</td>
<td>49</td>
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<td>0</td>
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<tr>
<td>Responsibilities</td>
<td>6</td>
<td>0</td>
<td>42</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Founder Relative Contribution

#### Founders’ Weighted Contributions

**Weighted Scores (1-10)**

<table>
<thead>
<tr>
<th></th>
<th>Founder 1</th>
<th>Founder 2</th>
<th>Founder 3</th>
<th>Founder 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea</td>
<td>70</td>
<td>21</td>
<td>21</td>
<td>0</td>
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<tr>
<td>Business Model</td>
<td>6</td>
<td>16</td>
<td>2</td>
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<tr>
<td>Domain Expertise</td>
<td>30</td>
<td>20</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Commitment &amp; Risk</td>
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<td>49</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Responsibilities</td>
<td>0</td>
<td>36</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

| Total Points      | 106       | 142       | 52        | 20        | 321       |
| % of Total        | 33.0%     | 44.2%     | 16.5%     | 6.2%      | 100.0%    |

*Only use for guidance. Do not use the calculated values.*
What if you got it wrong?

• Vesting of founders’ shares can be a partial solution
• Can you get founders to consider a “do-over”?  
  – Use the Founders’ Shares Calculator
• If not, can you barter a trade of equity for something else, i.e., accelerated vesting; consulting agreement; ...?
• Facilitate a new round of investment and let the new investors ”fix” things
• Threaten to leave
• Leave
Rules of Thumb

Frameworks for thinking about equity compensation
From 30,000 feet

• At the end of the day, founders and management will own 20% - 33% of the company (at the time of an exit)

• During the early stages of the company, stock option pools are likely to be in the 10% - 25% range. Pools are often replenished with each round.
Stock Options

What’s the big deal?
What a Stock Option Isn’t

A Stock Option is not Stock
A Stock Option Is

• The right to buy a share of stock sometime in the future
• At a price established at the time of grant, i.e. the exercise price
• For a specific length of time (2 years, 5 years, 10 years?)
What’s the Big Deal about Stock Options?

• An example:
  – 50,000 stock options with a $1 exercise price
  – Company is acquired in 5 years for $10 per share
    • Buy 50,000 shares of stock at $1 per share
      = $50,000 is paid out
    • Immediately sell 50,000 shares at $10 per share
      = $500,000 is received
    • Gain: $450,000
      – Caution: it’s ordinary income
How many options is enough?

• Depends on total number of company shares on a fully diluted basis
  – 100 options with total of 10,000 shares equals
  – 10,000 options on 1,000,000 shares equals
  – 100,000 options on 10,000,000 shares equals
  – 1% fully-diluted equity

• They are all equal, but what number is most impressive?
How many options is enough?

From another perspective:
You've been offered 5,000 options

<table>
<thead>
<tr>
<th>Fully-diluted shares</th>
<th>% ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>50.00%</td>
</tr>
<tr>
<td>100,000</td>
<td>5.00%</td>
</tr>
<tr>
<td>1,000,000</td>
<td>0.50%</td>
</tr>
<tr>
<td>10,000,000</td>
<td>0.05%</td>
</tr>
</tbody>
</table>

• You **MUST** know how many fully-diluted shares exist to evaluate an offer of options
Vesting

Now you see it, now you don’t!
Vesting Schedule

• A grant of options **does not mean you own those options**
• You earn those options over time - vesting
• Purpose: to keep the employee motivated to stay with the company
• Typical schedule: 4-year vesting period
  – 25% of shares cliff vest on the first anniversary
  – 1/36th of the balance per month over the next 3 years
Vesting Schedule Considerations

• Cliff vest means lump sum vests (a year’s worth)
• One year cliff vest means, in essence, that you’re on probation for the first year
• Monthly vesting thereafter tethers you to the company for an additional 3 years
• Similarly, if the company is acquired, unvested options tether you to the acquiring company
Small Piece of a Large Pie

What does that mean?
## The Way It’s Supposed to Work

<table>
<thead>
<tr>
<th></th>
<th>Start Shares</th>
<th>Seed Round Shares</th>
<th>Round 2 Shares</th>
<th>Round 3 Shares</th>
<th>IPO Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founders</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Option Pool 1</td>
<td>66,667</td>
<td>66,667</td>
<td>66,667</td>
<td>66,667</td>
<td>66,667</td>
</tr>
<tr>
<td>Option Pool 2</td>
<td>111,111</td>
<td>111,111</td>
<td>111,111</td>
<td>111,111</td>
<td>111,111</td>
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<tr>
<td>Option Pool 3</td>
<td>28,674</td>
<td>28,674</td>
<td>28,674</td>
<td>28,674</td>
<td>28,674</td>
</tr>
<tr>
<td>Total Option Pool</td>
<td>0</td>
<td>66,667</td>
<td>177,778</td>
<td>206,452</td>
<td>206,452</td>
</tr>
<tr>
<td>Investor 1</td>
<td>166,667</td>
<td>166,667</td>
<td>166,667</td>
<td>166,667</td>
<td>166,667</td>
</tr>
<tr>
<td>Investor 2</td>
<td>444,444</td>
<td>444,444</td>
<td>444,444</td>
<td>444,444</td>
<td>444,444</td>
</tr>
<tr>
<td>Investor 3</td>
<td>458,781</td>
<td>33.33%</td>
<td>458,781</td>
<td>458,781</td>
<td>458,781</td>
</tr>
<tr>
<td>Total Investor</td>
<td>0</td>
<td>166,667</td>
<td>611,111</td>
<td>1,069,892</td>
<td>1,413,978</td>
</tr>
<tr>
<td>Total</td>
<td>100,000</td>
<td>333,333</td>
<td>888,889</td>
<td>1,376,344</td>
<td>1,720,430</td>
</tr>
</tbody>
</table>

### Pre- and Post-financing values
- **Pre-financing value**
  - $1,000,000
  - $2,000,000
  - $5,000,000
  - $10,000,000
  - $20,000,000
- **Post-financing value**
  - $150,000,002
  - $187,500,002

### Investment
- $1,000,000
- $5,000,000
- $10,000,000
- $37,500,000

### Price per share
- $6.00
- $11.250
- $21.797
- $108.984

### Value of Founders' Shares
- $600,000
- $1,125,000
- $2,179,688
- $10,898,438
Frank’s Rules of Thumb
when considering a single employment offer

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>“rainmaker”</td>
<td>8.0%-12.0%</td>
</tr>
<tr>
<td>COO</td>
<td>“the business guy”</td>
<td>4.0%-8.0%</td>
</tr>
<tr>
<td>VPs</td>
<td>1-2 “key” players</td>
<td>2.0%-3.5%</td>
</tr>
<tr>
<td>VPs</td>
<td>Other</td>
<td>1.0%-2.5%</td>
</tr>
<tr>
<td>CFO</td>
<td>“supply &amp; demand”</td>
<td>0.5%-1.0%</td>
</tr>
</tbody>
</table>
# Founders vs. Non-Founders

<table>
<thead>
<tr>
<th>Title</th>
<th>Median Cash</th>
<th>Median Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO - Founder</td>
<td>$200,000</td>
<td>9.0%</td>
</tr>
<tr>
<td>CEO – Non-Founder</td>
<td>$225,000</td>
<td>5.0%</td>
</tr>
<tr>
<td>President / COO - Founder</td>
<td>$175,000</td>
<td>5.0%</td>
</tr>
<tr>
<td>President / COO – Non-Founder</td>
<td>$200,000</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

*Per Brad Feld, askthevc blog*
End-Game Arithmetic
Who owns what at liquidity event?
*Per Don Dodge, The Next Big Thing Blog*

<table>
<thead>
<tr>
<th>Title</th>
<th>% Equity</th>
<th>Number</th>
<th>Total Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>4.00%</td>
<td>1</td>
<td>4.00%</td>
</tr>
<tr>
<td>Vice President</td>
<td>1.00%</td>
<td>6</td>
<td>6.00%</td>
</tr>
<tr>
<td>Director</td>
<td>0.50%</td>
<td>5</td>
<td>2.50%</td>
</tr>
<tr>
<td>Manager</td>
<td>0.25%</td>
<td>10</td>
<td>2.50%</td>
</tr>
<tr>
<td>Others</td>
<td>0.05%</td>
<td>100</td>
<td>5.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>20.00%</strong></td>
</tr>
</tbody>
</table>
Other Rules of Thumb

• Directors 0.50% – 1.00%
• Advisors 0.25% – 0.50%
• Founder vesting
  – 25% at closing + $\frac{1}{36}$ per month for 3 years
• Vesting acceleration at change of control
  – Management-friendly: double trigger
  – Investor-friendly: no acceleration (remember the earlier tethering comment?)
Considerations

• Founders vs. Non-Founders
  – When do you bring someone on board?
  – % equity may vary by a factor of 3
• Fairness: role of comparables
  – Within the company
  – Compared to other companies
• Stock options can come in many different “flavors”
  – Non-qualified options
  – Incentive stock options
• Each “flavor” may have very different tax consequences
• Stock options vs. restricted stock
• Pre-financing vs. post-financing – can be an enormous consideration
Exercise Price

serious tax & securities issues related to what follows

• Exercise price is tied to the company valuation
• Preferred stock is superior to common stock
• Preferred stock share price could be considered higher than common stock
• The difference between common stock and preferred stock diminishes over time & as commercial traction takes hold
• Common may be as low as 25% of preferred (at least at the last time I asked about this)
Clichés

*with some elements of truth*

• Focus on the share price. As long as it’s going up, you’re OK.

• Cosmetics matter. Option grants of tens-of-thousands of shares can be persuasive, even if the actual value is miniscule.

• It is the CEO’s job to sell the vision. Candidates must be excited about opportunity and their role in realizing it. “Compensation is secondary.”
Final thoughts

• Budget your equity distribution over a reasonable time frame
• Don’t do anything without strong professional assistance
• Develop a network of mentors and advisors who can help you design something appropriate for you and your company

• Don’t do anything without strong professional assistance