

**Non-Dilutive
Funding and
Ways To
Bootstrap Your
Startup Company**

Stephen Y. Chow, Esq.

October 3, 2017

Disclaimer

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Non-Dilutive Funding

- No loss of equity – future returns
- “Bootstrapping” on current cash flow
 - Service fees, research contracts
 - Licensing royalties (neighboring markets)
 - Advances by customers (development contracts)
 - “Transformational”: re-purposing of funded entity
- Government, **Non-Governmental Org. or Corporate Grants**
- Debt
 - Trade (“on account”)
 - Unsecured/Secured

Sources of Non-Dilutive Funding

- Government or NGO (foundation) grants
 - Small Business Innovation Research (www.sbir.gov)
 - file patents applications first to avoid government “march-in”
- Institutional/Bank (debt)
 - usually for established businesses with stable assets
 - Small Business Association guarantees (www.sba.gov)
 - Venture debt (e.g., Silicon Valley Bank)
- “Channel financing” (debt)
 - advances by customers
 - “non-recurring engineering” costs in contracts
 - strategic corporate investment (grants, debt, equity)

Debt Financing Advantages/Issues

- Allows leveraging of equity funds
- Interest deductible
- Requires stable valuation: current ratio (current assets/current liabilities) traditionally 2:1, debt/equity ratio
- Debt “hurts” balance sheet: higher cost of later borrowing, investment
- Friends and family “loans” need to be documented with interest payments

Debt Financing: Types of Borrowing

- Working capital lines of credit
- Equipment lease financing
- Term loans
- Mortgage loans

Debt Financing: Terms of Borrowing

- Personal recourse/guarantees
- Collateral (called security interests, pledged)
 - Fixed assets/real property
 - Movable assets
 - Accounts receivable
 - Intellectual property, Copyright Office registration
- Financial covenants
 - current ratio, debt/equity
 - zero-balance for specified periods on revolving debt

Publishing/“Scientific Misconduct”

- Academic publication—
 - Science (Am. Assoc. for Advancement of Science)
 - Nature
- Peer review
 - ”After publication, all data necessary to understand, assess, and extend the conclusions of the manuscript must be available to any reader of *Science*.”
 - Submitted comments
- Accusations of “Scientific Misconduct” (falsification of data)
 - David Baltimore – Thereza Imanishi-Karl, 1989-1996 Office of Research Integrity
 - University/Institutional Ethics Boards

Government Grant (NSF)

- See National Science Foundation Grant General Conditions.
www.nsf.gov/pubs/2001/gc101/gc101rev1.pdf
- Copyrights owned by investigator, with non-exclusive license to government
- Same with patents
- NSF “expects investigators to share with other researchers, at no more than incremental cost and within a reasonable time, the data, samples, physical collections and other supporting materials created or gathered in the course of the work.”

Conflict of Interest Rules

- **DHHS: Objectivity in research**
 - 45 CFR 50.601-.607, 45 CFR 94.1-.6, 60 FR 35810 (July 11, 1995)
- **NASA: Limitations on subcontracting**
 - 48 CFR 1852.219-80 to -85, 71 CFR 61687 (Oct. 19, 2006)
 - Phase I, contractor min. 2/3 research
 - Phase II, contractor min. 1/2 research
 - “Primary employment of principal investigator”

Small Business Innovation Research (SBIR)

- SBIR Program at 15 USC 638
 - Small Business Innovation Development Act of 1982
 - Small Business Research and Development Enhancement Act of 1992 (also STTR program)
 - Small Business Innovation Research Program Reauthorization Act of 2000
 - Qualifications:
 - 51% American-owned for-profit and independently operated
 - or 51% owned by another for-profit 51% American-owned
 - Principal researcher employed by business
 - Company size limited to 500 employees, 13 CFR 121.701-.705
 - Terms and conditions at 48 CFR (Federal Acquisition Regulations, general and by agency)
 - Phase I application example USDA: 7 CFR 3403.7

SBIR (2)

- Grants by federal agencies (2.5% of “extramural” R&D)
Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, and Transportation; Environmental Protection Agency, National Aeronautics and Space Administration, National Science Foundation
- Three phases
 - Phase I: scientific and technical merit and feasibility (\$150K/6mo; show commercial potential)
 - Phase II: expand on Phase I results (\$1M/24mo; demonstrate funding prospects)
 - Phase III: commercialization with non-SBIR funding
- Bayh-Dole Act (1980): Four-year exclusivity on data; government licensed 35 USC 202 (non-exclusive; “march-in” rights); see *Stanford v. Roche*

STTR

- Also at 15 UCS 638; Small Business Technology Transfer Reauthorization Act of 2001
- Focus on technology transfer
- Qualifications
 - Business similar to SBIR
 - Principal investigator need not be primarily employed
 - Nonprofit research institutions (universities, etc.)
- Departments of Defense, Energy, and Health and Human Services; National Aeronautics and Space Administration, National Science Foundation; mandated .3% set-aside
- Phasing similar to SBIR, but \$100K, \$750K

Outside Sources of Technology

- Prejudice v. NIH (“not invented here) has given way to virtual corporation (outsourcing) and third-party validation
 - but initial “idea submission” resisted because of danger of subsequent claims of ownership
- Government programs:
 - Small Business Technology Transfer Program (STTR) like SBIR
 - Cooperative R&D Agreements (CRADAs), 15 USC 1310a
- Joint ventures/licensing
 - Allocation/control of efforts, costs, proceeds and IP ownership
 - federal (patent and copyright) v. state (contract) law
 - exclusivity: downstream control creates tension with antitrust laws, particularly with horizontal combinations
 - field of use, geographic OK
 - grant-backs more questionable
 - Misuse of IP by tying may render IP unenforceable

Channel Financing of Development

- Advances
 - Non-recurring engineering costs
- Security for advances
 - IP escrow
 - Security interests in IP (may be foreclosed)
 - Licenses (may limit other deals)
- Considerations
 - Future competition with partner
 - Future strategic purchase by partner

Tech Transfer/Licensing

- Who are the parties? Who owns technology to transfer?
- What is transferred/granted?
 - Patents only (“naked” license, usually in settlement of litigation)
 - Biological materials (retain title, progeny)
 - “Know-how”/services/consulting
- Warranties (promise/contract of present or future condition)
 - Merchantability (acceptable quality in trade), fitness for purpose
 - Title-validity, quiet enjoyment-noninfringement
- Royalties (lump-sum or “running”)
 - Base: per unit or per use (“metering”)
 - Period
 - Rate: see litigation “Georgia-Pacific” factors (comparables)
 - start 1/4 to 1/3 expected gross margin or savings
 - Anticipate “stacking” of royalties for 3d party technologies

Tech Transfer/Licensing (2)

- Development/purchase obligations
- Confidentiality (survives)
- Termination
 - Under what circumstances
 - Who owns what, return or destruction of materials
- Assignment/delegation, change of corporate structure
- Bankruptcy concerns
 - executory contracts may be rejected by trustee
 - 11 U.S.C. 365 amended to protect licensee that continues to pay
- Disclaim Convention on Int'l Sale of Goods, Uniform Computer Transactions Act (UCITA)?

Special Issues: Software

- Ownership of copyright v. copy:
 - “work for hire” only if actual employees, otherwise need written assignment
 - Owning a copy does not allow public display or performance
- Use (loading into memory) or distribution of run time code protected by copyright in source code
- Copyright owner has exclusive right to prepare “derivative work,” such as a translation “or any other form in which a work may be recast, *transformed*, or adapted.”
- “Fair use” usually is “transformative,” addressing a different market
- Exceeding license “scope” is infringement, not contract breach

Special Issues: Open Source

- Public (“crowd”) development
 - Contrary to proprietary code licensing business model
 - Liability/quality issues as to accountability
- Free Software Foundation (GNU) “copyleft” (“viral”)
 - “Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions.” GPL sec. 6 (1991)
 - “Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.” GPL v 3 sec 11 (2007)