Mobius Microsystems
Convergence of Semiconductor Technologies

Mobius Microsystems Incorporated
3430 E. Jefferson Ave. #140
Detroit, MI 48207
313.205.3489
management@mobius-microsystems.com
www.mobius-microsystems.com

Business Plan

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Executive Summary

Mobius Microsystems **brings to market a truly disruptive semiconductor technology: an on-chip clock generator that is small, high-performance, low-power, easily tunable, and half the cost of existing solutions.**

The Problem

Electronic systems require a number of core technologies to be assembled. Typically, these systems include combinations of mechanical, analog, and digital technologies. In airbag deployment systems for example, a mechanical accelerometer is connected with analog circuits for interpretation of the deceleration signal. Mixed-signal circuits are included to convert the data from analog to digital format. The digital circuits then collect the data, perform signal processing to determine the nature of the impact, and communicate the information to additional peripheral electronics that mechanically deploy the airbag. These systems are typically assembled as a variety of integrated circuits on a printed circuit board (PCB). These assembled systems are:

- *Large* because several different integrated circuits (ICs) are required and the package for each individual circuit is significantly larger than the circuit itself
- *Expensive* because the package for each individual IC comprises up to 65% of its cost
- *Power-hungry* because the power required to send a signal from one IC to another IC is approximately ten times greater than the power required to send a signal within the same IC
- *Complicated* because the system engineer must understand the interfaces between each different IC
- *Less reliable* because IC interconnects on a circuit board fail at a higher rate than connections within the IC itself
- *Limited* in terms of functionality commonly due to size and power constraints

The microsystems industry has emerged to address these problems. Microsystems are intelligent miniaturized systems comprising sensing, processing, and actuating functions integrated on a single chip or multi-chip hybrid. Microsystems are able to exploit the benefits of closely integrating two or more of the following technologies: electrical, mechanical, optical, chemical, biological, or magnetic.

The Vision

Mobius' microsystems technology enables system developers to move quickly toward less expensive, smaller, more functional, and more reliable products that consume less power. Products incorporating *Mobius* technology will lead the microsystems industry by orchestrating the convergence of previously disparate semiconductor components onto a single chip. Our solutions will help our customers reap orders of magnitude improvements in the products that they build.

The Product

Mobius' initial microsystems solution is a high-performance, low-power, on-chip clock generator, marketed as the Digital Monolithic Clock, or DMC. For all synchronous semiconductor ICs to operate, the clock function is as necessary as power itself. The clock is the signal that sets the processor speed to a specific frequency, such as 1 Gigahertz (GHz). Currently, the state-of-the-art clocking solution consists of a large discrete crystal component located on the printed circuit board with supporting electronics that occupy space on the chip. The unprecedented features of *Mobius*' DMC technology include the following:

- Complete on-chip implementation of the clock generator requiring no external components
- High-performance enabled by Microelectromechanical Systems (MEMS) technology
- MEMS that are completely compatible with standard integrated circuits and manufactured on a standard line requiring no additional processing steps

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- Stable, tunable operating frequency that reduces power consumption and increases flexibility
- Lower power consumption as compared to existing high-performance clock generation technologies
- Lower cost as compared to existing high-performance clock generation technologies

The DMC will be sold in the industry-accepted form of semiconductor intellectual property (IP), much like a blueprint, allowing system engineers to design the clock generator directly into their products. Prototypes have already been manufactured at *Taiwan Semiconductor Manufacturing Company* in the 0.18-micron CMOS process and at *IBM* in the 0.13-micron Cu9S silicon-on-insulator (SOI) process.

The Value Proposition to Our Customers

The value proposition of *Mobius*' DMC technology is most compelling when examined in the end product application. In the buying process, electronic product manufacturers select integrated circuits based on functionality and performance for the given application. If *Mobius*' DMC technology were to be incorporated into a *Compaq* iPAQ-3600 Personal Digital Assistant (PDA), it would offer significant reductions in price, size, and power consumption as shown in Table 1 below.

Example: iPAQ 3600 PDA	Using Current Technology	Using *Mobius*' Technology
Clock Hardware Costs	~$1.00	~$0.45
Clock Space Requirements	323mm² on PC Board	0.09mm² on semiconductor
Clock Power Requirements	32mW	4mW

Table 1: Mobius' value proposition applied to the Compaq iPAQ-3600 utilizing new DMC

The *Mobius* DMC would allow *Compaq* to build a smaller, less-expensive, more functional PDA with greater battery life, thus better satisfying its demanding customers.

The *Mobius* Team

Mobius was founded by University of Michigan Doctoral Fellow Michael S. McCorquodale and his research advisor, Dr. Richard B. Brown, along with Michigan MBA students Jeff Wilkins and Wade Rushing as well as veteran entrepreneur Jim Vincke. The founding team will continue to recruit top technical and management expertise commensurate with the company's growth. The *Mobius* team is dedicated to building a world-class sustainable enterprise through the commercialization of innovative microsystems technologies.

Market and Customers

To bring the DMC to market, *Mobius* will initially target the $720 million addressable market for clock generation for system-on-chip (SoC) devices. These devices deliver increased functionality by integrating processing cores, memory, and logic in a single package. SoCs alone represent a $32 billion market yet this market is merely one segment of the very large $151 billion total semiconductor market. SoC companies include prominent names such as *Motorola*, *Broadcom*, and *Altera*; these companies lead the industry in innovative semiconductor designs. Portable electronics such as cell phones, PDAs, wireless LAN, and others are some of the largest end-markets for SoC, however SoC devices are also being utilized in more traditional markets such as data storage and transportation.

Assuming a conservative average SoC selling price of $20 per chip, the $32 billion SoC market represents an impressive 1.6 billion units produced annually. Multiplying by *Mobius*' average selling price of $0.45 per DMC unit, this translates to $720 million in annual revenue for *Mobius*' first potential market.

While the total market potential for the DMC is substantially greater than clock generation for SoC alone, given that every synchronous semiconductor produced (the bulk of the market) requires a clock signal to operate, *Mobius* has chosen to focus on the SoC market due to the market's comfort with third party IP, annual growth rates in the 25% range, and demand for all aspects of the DMC's value proposition (small-size, high-performance, low-power, low-cost, increased flexibility).

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SoC is one of the fastest growing segments within the semiconductor industry. Throughout the semiconductor's history, the need for smaller, more robust, more reliable, and less expensive systems has driven system and chip engineers to integrate more functions on-chip versus assembling discrete components. SoC is the latest manifestation of this 25+ year trend. An article in BusinessWeek recently noted,

> *These days, semiconductor power houses such as Intel, Texas Instruments, and STMicroelectronics are racing to usher in a generation of chips that can replace whole colonies of present-day processors by combining all their functions into one sliver of silicon, a 'system-on-a-chip'."* (*BusinessWeek Nov. 2002 pg. 128A*)

The SoC market represents a significant initial opportunity for *Mobius* as it is a high-volume (touches a wide array of end-products) and high-growth market that has many dynamics well-suited for *Mobius*' business model and marketing strategy. All of these issues are discussed in more detail in the sections that follow.

Competition

Mobius' DMC will potentially compete with three existing clock generation technologies that are currently available to customers. These are:

- Fully discrete components using crystal technology (moderately common)
- Fully integrated electronics using a low-performance ring oscillator or similar technology (rare)
- Hybrid components using off-chip crystals and on-chip oscillators (most common)

There are advantages and shortcomings with each technology; however, there is currently no inexpensive, small-sized, low-power, high-performance, tunable, reliable, and accurate solution for clock generation. Due to the fact that no existing technologies are microsystems-based, *Mobius* expects competition to originate from other start-up ventures or established companies with microsystems know-how (e.g.: *Motorola*, *Analog Devices*).

Due to the time and resources necessary to develop microsystems solutions as well as the industry's comfort with IP licensing, its is less expensive for microsystems companies to purchase *Mobius* IP for their products; therefore, other start-up companies represent a greater competitive threat. At this time, *Mobius* is not aware of any other companies pursuing high-performance on-chip clock generation. A portfolio of provisional patent applications were filed throughout 2002 on the DMC and full utility patent applications will be filed with the U.S. Patent and Trademark Office in February, 2003. *Mobius* is confident in its IP position (detailed later), as well as its technological lead.

The Business and Financial Model

Mobius' start-up strategy is focused at bringing its initial technology to market as quickly as possible with minimal capital requirements. To do so, *Mobius* will employ a value-added semiconductor IP business model. The product is delivered to the customer as a manufacturing blueprint, or macro. Revenue originates primarily from two sources: licensing the macro for design and manufacturing as well as royalties generated when customers' chips are manufactured. Value-added services will surround product deployment into each customer's products. Companies such as *ARM*, *MIPS*, *Rambus*, and *Parthus* have all achieved significant success with similar business models.

Mobius will begin sales efforts in early 2003 and expects to close its first sale of an IP license in the third quarter of 2003. The company forecasts to sell a total of four licenses in 2003, ramping up to thirteen licenses in 2004. As is customary in the industry, a direct sales force as well as commission-based technical sales representatives will be utilized for the majority of sales efforts. *Mobius* founders will self-fund company operations until the first sale is completed, after which an equity investment is expected. The following table shows summary pro forma financial information forecasted to 2007:

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Pro Forma FInancials (in thousands) Fiscal Year Ending December 31,	2003	2004	2005	2006	2007
Total Revenue	573	2,813	7,071	12,469	19,408
Gross Profit	463	2,153	5,388	9,528	15,017
Operating Income (loss)	(181)	(138)	1,134	2,532	4,708
Net Income (loss)	(181)	(135)	809	1,526	2,843
Equity Capital Proceeds	610	500	—	—	—
Cash Flow (after equity proceeds)	315	310	343	944	2,001

Table 2: Mobius' Pro Forma Financials from FY 2003 to 2007

The Preliminary Funding Requirements and Critical Path

Mobius is currently seeking $500,000 in investment capital from outside investors, with seed capital of $110,000 provided by *Mobius*' founders. The initial investment will be sought after *Mobius* closes its first IP license sale, which is expected in the third quarter of 2003. Invested capital will be used to fund the following activities:

- Hire and develop a professional marketing and sales team to ramp sales in North America and Asia
- Customize the DMC technology for additional manufacturing processes
- Fund R&D enhancements to the DMC

A second investment round of $500,000 may be sought six to nine months after the first round investment. The additional capital would be used to hire and develop a sales team to ramp sales in Europe as well as hire technical expertise to commercialize follow-on technologies.

Mobius is a growth-oriented venture that is founded with the intention of building a lasting enterprise. The team is looking for a long-term investment or strategic partner that can provide resources to support the initial and near-term product commercialization efforts. The *Mobius* team will continually focus its efforts on growing the company while maximizing shareholder wealth. Investment exit opportunities will be evaluated thoroughly throughout the company's growth cycle.

Mobius is concentrating on a concurrent three-stage critical path to a projected capital injection in Q3 of 2003:

- Thorough test and verification of alpha and beta prototypes from *Taiwan Semiconductor Manufacturing Company* (alpha prototypes completed and delivered 5/02, test and verification expected by 3/03; beta prototypes completed and delivered 4/03, test and verification 5/03) and test and verification of alpha prototypes from *IBM* (completed and delivered 2/03, test and verification 6/03)
- Execution of the exclusive licensing agreement with The University of Michigan (expected 5/03)
- Securing of initial customer contract (expected Q3/03)

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Technology and Product

The *Mobius* Technology Vision

Mobius Microsystems will commercialize cutting-edge advances in microsystems research to address current and future demands present in the semiconductor industry. Microsystems are intelligent miniaturized systems comprising sensing, processing, and actuating functions on a single chip or multi-chip hybrid. By closely integrating two or more of the following technologies: electrical, mechanical, optical, chemical, biological, or magnetic, *Mobius*' microsystems products will allow its customers to build more-functional and less-expensive products that are significantly smaller in size and consume less power.

The Advantages of Microsystems

As discussed briefly in the executive summary, *Mobius* has tapped the potential of microsystems to develop a revolutionary new high-performance clock generator for synchronous semiconductors. Beyond *Mobius*' initial product, the convergence of the various technologies named above create new opportunities to deliver the following benefits to electronic product manufacturers:

- Lower total component costs that allow customers operating in markets with high pricing pressure to remain competitive
- Smaller components that allow customers to satisfy the demand for miniaturization
- Components that consume less power enable products to run longer, a key driving force in the portable electronics market
- Components that simplify development and accelerate time to market in industries where rapid innovation is critical to capture market opportunities
- More reliable components that ensure customers' ability to deliver quality and achieve customer satisfaction
- Increased functionality that satisfies customers' insatiable need for feature-rich products

Mobius will launch its initial technology with a focus on the following market needs:

- Semiconductor products with low-power, high-reliability, small-size, and low-cost
- Convergence of the mechanical, analog, and digital domains onto a single component
- Utilization of Microelectromechanical Systems (MEMS) technology to meet performance and integration demands that cannot be achieved with traditional transistor circuits alone

Mobius intends to become the industry leader in microsystems technology by producing products that meet these demands within high-growth and high-volume markets.

Initial Product Offering

Mobius' initial microsystems solution is a high-performance, low-power, tunable on-chip clock generator, or Digital Monolithic Clock (DMC). All synchronous semiconductor ICs fundamentally require both power and a clock to operate. The clock is the signal that sets the processor speed to a frequency such as 1 Gigahertz (GHz). The unprecedented features of *Mobius*' DMC technology include the following:

- Completely on-chip implementation of the clock generator requiring no external components
- High performance enabled by Microelectromechanical Systems (MEMS) technology
- MEMS circuitry that is completely compatible with standard integrated circuits and manufactured on a standard fabrication line requiring no additional processing steps or costs
- Tunable operating frequency, which reduces power consumption and increases flexibility, unlike current fixed-frequency technology

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- Considerably lower power consumption as compared to existing high performance clock generation technology
- Lower cost as compared to alternative high-performance clock generation technologies

Alpha and beta DMC prototypes have already been manufactured at *Taiwan Semiconductor Manufacturing Company* (*TSMC*) and alpha prototypes at *IBM*; All are undergoing significant testing. The *Mobius* DMC will be delivered to customers in the industry-accepted format of semiconductor intellectual property, also known as IP, which is the blueprint for the manufacturing of an integrated circuit. The details of semiconductor IP are discussed in the sections that follow.

Additional Technology and Research and Development

Initially, *Mobius* will focus all of its resources upon commercialization of the DMC, however *Mobius* will not be a single-product company. With a strong foundation conducting research and development in microsystems at The University of Michigan, a leading microsystems research institution, management intends to fuel *Mobius*' growth with the commercialization of additional microsystems technologies. One potential follow-on product already prototyped in the *TSMC* 0.18-micron CMOS process and patent-pending is an analog front end (AFE) that is low power, low voltage, and compatible with standard digital integrated circuits. The *Mobius* AFE would provide customers with an on-chip interface between the widestvariety of sensors and a processor as compared to the technology that is currently available in the marketplace.

Customer Value

Mobius' initial product offers the best value to companies that build system-on-chip (SoC) products. SoC is the latest evolution in chip design wherein core functions are integrated onto a single chip. Companies, such as *Motorola, Broadcom,* and *Sony*, employ SoC designs and continually search for innovative technology that can be easily incorporated to improve their semiconductor products. Key problems for these companies revolve around getting innovative products to market in the shortest amount of time. *Mobius* solves many of their problems with its DMC technology, as summarized in the table below:

Needs	The *Mobius* DMC Solution
Less expensive total component and system costs	A cost reduction of up to 80% for clock generation by eliminating discrete components with an on-chip solution
Smaller and fewer components	By adding the clock function on-chip, square inches used for off-chip clock generation are eliminated and the number of discrete components is reduced
Product delays and costs associated with component inventory	Adding the clock function on-chip reduces component inventory and supply chain costs associated with off-chip components
Components that afford simpler development and shorten design cycles	Development is simplified through the simpler integration of on-chip IP, versus board-level integration of crystals
Components that consume less power	On-chip clock product reduces consumed clock generation power by up to 85%, thereby increasing battery life
Increased functionality	Tunability over a range of frequencies; Power and size reductions afford engineers the opportunity to incorporate additional components
More reliable components	Circuit level integration is much more reliable than board level integration
Decreased time to market	*Mobius*' intellectual property permits innovation with little to no R&D time or investment
Increased share of total system revenue	*Mobius*' customers realize clock generation revenue previously captured by discrete clock component suppliers

Table 1: Customer needs and the correlated solution delivered by the Mobius' Digital Monolithic Clock

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The *Mobius* DMC has application and value to a much broader market than SoC as every synchronous semiconductor produced requires a clock to operate and many market segments have similar needs to the SoC market. SoC represents the most attractive initial market for the *Mobius* DMC technology due to its position on the forefront of semiconductor innovation. The SoC market is in the best position to broadly adopt microsystems technology and a number of companies have already invested R&D dollars in microsystems research. Management has specifically identified the following characteristics of the system-on-chip market that make it ideal for *Mobius*' initial product launch:

Market Dynamics	SoC Market
Utilization of Emerging Technology	High early acceptance to gain product advantage
Design Cycle	Fast design cycles to meet market opportunities (as short as 6 months) that rarely involve prototyping
Comfort with Innovative Semiconductor Intellectual Property and IP Vendors	High acceptance to add functionality, meet design cycle demands and maintain flexibility
Expectations of IP Vendor	Value-added service
Volume	Medium to high (Many consumer product categories)
Foundry for Manufacturing	*Taiwan Semiconductor Manufacturing Company (TSMC), IBM, United Microelectronics Corporation, and AMI Semiconductor*

Table 2: SoC market dynamics

Mobius offers a compelling value proposition with its technology and embraces the major dynamics of the SoC market.

Competing Technologies

Mobius' DMC will compete with three different technology options for clock generation that are currently available to customers. They are:

- Fully discrete components using crystal technology (moderately common)
- Fully integrated electronics using a ring oscillator or similar technology (rare)
- A hybrid of discrete and integrated components using off-chip crystals and on-chip oscillators (most common)

There are advantages and shortcomings of each technology. A summary of these technology metrics is given in the table below.

Technology Metric	Discrete	Integrated	Hybrid	*Mobius*
Cost	Expensive	**Inexpensive**	Moderate	**Inexpensive**
Size	Large	**Very small**	Moderate	**Very small**
Power consumption	Very high	**Very low**	Moderate	**Very low**
Tunability	None	Limited	None	**Wide**
Reliability	Moderate	**High**	Moderate	**High**
Frequency Stability	**Excellent**	Very poor	**Excellent**	**Excellent**
Frequency Accuracy	**Excellent**	Poor	**Excellent**	Very Good

Table 3: Summary of technology metrics as compared to available technology and Mobius technology

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Demands within the clock generator market have moved away from wholly discrete or integrated solutions, where some demands are simply missed, toward hybrid clock solutions where most demands are only modestly satisfied. While *Mobius* does not intend to displace every clock generation technology, this table identifies a clear gap in the marketplace:

> *Currently, no inexpensive, small-size, low-power, high-performance, tunable, reliable, and accurate on-chip solution exists for clock generation in the semiconductor market.*

Mobius' technology is meeting a market need that is currently unaddressed in an acceptable manner.

Commercialization Process

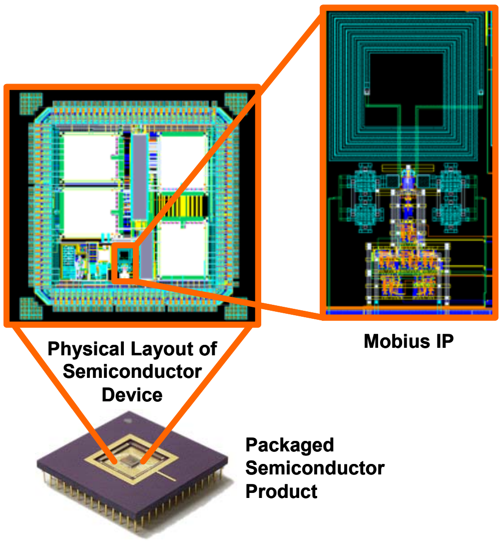

Figure 1: Semiconductor IP design illustration

The end product delivered by *Mobius* to its customers is in the form of intellectual property, or IP, technically known as a hard macro for manufacturing. A hard macro is a physical representation of the design, similar to a blueprint. The blueprint can be dropped into a much larger semiconductor product and then manufactured as Figure 1 illustrates.

The IP licensing business model limits the manufacturing burden to only prototypes for *Mobius,* as production scale manufacturing is financed and managed by the customer. Delivery of hard macros protects *Mobius*' IP assets, since the delivered product is a patent-protected physical representation of the design and also difficult to reverse engineer. Most importantly, an IP business model will allow *Mobius* to gain market entry with minimal capital requirements and high gross margins, similar to a software company. Companies such as *ARM*, *MIPS*, *Rambus*, and *Parthus* have all utilized similar models successfully.

Each *Mobius* macro must be ported, or transferred, and configured to a specific manufacturing facility process. Additionally, each prototype must be proven at each facility. Within the research environment, *Mobius* has already prototyped the DMC in both *IBM's* 0.13-micron Cu9S silicon-on-insulator (SOI) process and *TSMC's* 0.18-micron mixed-signal CMOS process.

For the *TSMC* and *IBM* processes, *Mobius*' commercialization effort will require only specification of the part, development of a design manual, software bundling of the macro and simulation models, and implementation of security protocol against piracy. The strategic decision to prototype the technology in these processes was made because *IBM* is emerging as the premiere SOI facility while *TSMC* is clearly the industry leader for bulk silicon CMOS manufacturing. Utilizing these relationships already in place, *Mobius* will partner with these manufacturers through their IP partnership programs allowing *TSMC's* and *IBM's* many customers to easily include the DMC in their manufactured products. With prototypes already developed in these technologies, *Mobius* is positioned to capture a large initial market. For additional processes, prototype development will be required. *Mobius* has and will continue to use *MOSIS* of Marina del Rey, CA, for prototype developments. *MOSIS* is a low-cost and low-volume multi-user foundry service for this activity.

Product Development Summary and Timeline

The *Mobius* DMC has been designed and developed at The University of Michigan by Michael S. McCorquodale and Dr. Richard B. Brown as part of Mr. McCorquodale's doctoral research. The intellectual property surrounding the developed technology has been disclosed to The University of Michigan and provisional patents have been filed with the U.S. Patent and Trademark Office (USPTO). (*Mobius*' complete IP position is discussed more thoroughly in the corporate strategy section). The prototypes are currently undergoing rigorous environmental, functional, and reliability testing. Both *IBM* and *Taiwan Semiconductor* have offered additional pro bono manufacturing capacity for revisions and/or corrections of design issues as they may arise. Full utility patent applications will be filed in February, 2003. Table 4 captures the product development history and status as well as commercialization timeline.

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Q4 2001 - Q1 2002	Q2 2002 - Q3 2002	Q4 2002 - Q1 2003	Q2 2003 - Q3 2003
DMC technology moves from engineering to prototype through facilities at *IBM*, East Fishkill, NY and *TSMC*, Taiwan Provisional patent applications are filed for the DMC DMC macro product commercialization programs are initiated *Mobius* full-scale business development begins	DMC technology is incorporated into an SoC design for prototyping at *TSMC* First DMC prototypes delivered by *TSMC* Sales and marketing plans begin development First potential end-market application identified for research environment prototype Incorporation completed and company founded	First DMC prototypes from *TSMC* verified SoC prototypes verified Full utility patent applications are filed Last market-ready research prototype transferred to *TSMC* for fabrication Commercialized DMC macro is ported to additional technologies	Formal license agreement executed with The University of Michigan Initial sales and deliveries of commercialized DMC macros *Mobius* commercialization related patents filed Technology made public through technical and commercial conferences and publications

Table 4: Mobius' initial product development and commercialization timeline

The Company

Company Overview

Mobius is an emerging microsystems company founded by University of Michigan Doctoral Fellow, Michael S. McCorquodale and his research advisor, Dr. Richard B. Brown with Michigan MBA students Jeff Wilkins and Wade Rushing as well as veteran entrepreneur Jim Vincke. The company was founded in 2002 as a Delaware C-Corporation with operations in Michigan. *Mobius* is an industrial partner with The Wireless Integrated Microsystems Engineering Research Center at The University of Michigan.

The *Mobius* business concept has evolved from several years of research and business development at The University of Michigan. Fundamental research has been executed by Mr. McCorquodale and Dr. Brown in The Electrical Engineering and Computer Science Department and in affiliation with The Wireless Integrated Microsystems Engineering Research Center (WIMS). WIMS is the only National Science Foundation Engineering Research Center in the United States devoted specifically to microsystems development. Business development has been in collaboration with The University of Michigan Business School, The Zell-Lurie Entrepreneurial Institute, and The Technology Management Office. Through its management team and above affiliations, *Mobius* is able to utilize the technical and business resources of one of the top educational and research universities in the world to build a successful, sustainable enterprise.

Critical Path

Mobius is concentrating on a concurrent three-stage critical path to a projected capital injection in Q3 of 2003:

- Thorough test and verification of alpha and beta prototypes from *Taiwan Semiconductor Manufacturing Company* (alpha prototypes completed and delivered 5/02, test and verification expected by 3/03; beta prototypes completed and delivered 4/03, test and verification 5/03) and test and verification of alpha prototypes from *IBM* (completed and delivered 2/03, test and verification 6/03)
- Execution of the exclusive licensing agreement with The University of Michigan (expected 5/03)
- Securing of initial customer contract (expected Q3/03)

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The Founding Team

Michael S. McCorquodale, CEO, CTO, and Chairman of the Board

Mr. McCorquodale received the B.S.E. with honors in Electrical Engineering from The University of Illinois at Urbana-Champaign in 1997 and the M.S.E in Electrical Engineering from The University of Michigan in 2000 where he is now a Doctoral Fellow. He has originated unique microsystem design concepts and led design teams to win national and international semiconductor design competitions. His professional experiences include managing communication system engineering activities and developing high-performance integrated circuits while at *Hughes Space and Communications Company*, in Los Angeles, CA. He has also served in business development with the Technology Management Office at The University of Michigan where he was involved in the identification of the resources required for successful commercialization of microsystems research.

Jeffrey G. Wilkins, Chief Operating Officer

Mr. Wilkins comes to *Mobius* with a strong background in marketing and sales, finance, and entrepreneurship. Prior to pursuing his MBA at the University of Michigan Business School, Mr. Wilkins gained finance and business development expertise through various positions within Corporate Banking at *Huntington National Bank* headquartered in Columbus, Ohio. Additional business development expertise was acquired at *Velocys, Inc.*, an early-stage spin-off of Battelle Memorial Institute, also in Columbus, Ohio, which is focused upon commercializing intellectual property developed in a research environment. He holds a B.A. degree from the University of Arizona and will graduate with a M.B.A degree from the University of Michigan in April, 2003. Mr. Wilkins has also founded and run several successful entrepreneurial ventures.

James Vincke, Chief Financial Officer

Mr. Vincke has over twenty-three years of experience in finance, business development and technology. He was an important part of the success of *Mechanical Dynamics Inc*. (MDI), a mechanical systems virtual prototyping company headquartered in Ann Arbor, MI. Mr. Vincke joined MDI as a startup and held several executive positions, including Chief Financial Officer during the $30M IPO. He holds B.S.E. and M.S.E. degrees in mechanical engineering, as well as a M.B.A., from the University of Michigan.

Dr. Richard B. Brown, Vice Chair of the Board

Dr. Brown received the B.S. with Highest Honors and the M.S. degrees in Electrical Engineering from Brigham Young University in 1976 and the Ph.D. at The University of Utah in 1985. He has worked in computer design as Vice-President of Engineering at *Holman Industries*, Oakdale, CA, and as Manager of Computer Development at *Cardinal Industries*, Webb City, MO. In September 1985, he joined the faculty of The University of Michigan Department of Electrical Engineering and Computer Science, where he now serves as the Interim Chair of the Department. Dr. Brown has conducted major research projects in the areas of solid-state sensors, high temperature CMOS, SOI, mixed-signal circuits, and high performance and radiation-tolerant computing systems based on VLSI digital GaAs. In addition to his academic responsibilities, he is a co-founder of *Sensicore*, a startup company that produces solid-state chemical sensors for ions in water or blood.

The Advisory Board

Jeffrey M. Wilkins

An experienced entrepreneur and business leader, Mr. Wilkins serves as chairman of the board of *Metatec International*, Inc., a company he founded and led until December, 2001. A pioneer in the optical disc-based information distribution business, Wilkins founded *Discovery Systems* in 1985. The company was renamed *Metatec Corporation* in 1991, and quickly became a leading national technology and CD-ROM manufacturing company. Prior to founding *Metatec*, Mr. Wilkins founded *CompuServe, Inc*. and served as the company's CEO from 1969 - 1985. As *CompuServe's* leader, he initiated the global emergence of online information services to personal computer owners and other businesses including a nationwide telecommunications network for data transmission, the first full-service electronic mail system for business and custom computer application services to organizations in a variety of markets and industries. Mr. Wilkins holds the B.S. and M.S. degrees in electrical engineering from The University of Arizona.

Keith L. Kraver

Mr. Kraver received the B.S.E. with honors in Electrical Engineering from Arizona State University in 1995 and the M.S.E. degree in Electrical Engineering from The University of Michigan in 1997. For his Master's work, he was responsible for the design of sections of two microprocessors. His doctoral research pertains to low-voltage and low-power analog and mixed-sig-

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nal IC design for embedded sensor applications. He managed the specification and design of the analog segment of a mixed-signal microcontroller, which led to several publications and recognition in a national IC design competition. Mr. Kraver's professional experience includes work at *National Semiconductor*, Santa Clara, CA, where he led the development of two low-voltage and low-power general-purpose amplifiers for cellular phone and battery powered sensing applications. Keith is currently with *Motorola* as he completes his dissertation.

Joe Giachino

Mr. Giachino received the degree B.S. in Engineering Physics and the M.S. degree in Physics from New York University. After holding positions at *Teledyne*, *Babcock and Wilcox*, and *Bailey Controls*, he joined *Ford Motor Company* in 1976. At *Ford*, Mr. Giachino has held a number of positions, including Program Manager for the Sensor Business Resource Center, Supervisor of Sensor and Actuator Technology, Supervisor of Forward Model Sensors, and Principal Engineer for Advanced Sensors. He led the cross-disciplinary teams that developed the Ford Silicon Capacitive Absolute Pressure (SCAP) Sensor, the Ford Silicon Micromachined Fuel Injector Nozzle, the Ford Micromachined Air Bag Accelerometer, and plastic packaging for thermistor sensing elements. He received the Henry Ford Technology Award for the development of the SCAP device. In 1997 he was elected a Fellow of the IEEE for "contributions to micromechanical and MEMS control systems." He is the holder of eleven U.S. patents. Mr. Giachino retired recently from *Visteon* to assume a new position at The University of Michigan where he is involved in commercialization of Microsystems research.

Dr. Dennis Grimmard

Dr. Grimmard received the Ph.D. in Electrical Engineering from The University of Michigan at Ann Arbor in 1990. After graduation, Dr. Grimard accepted a position with *IBM* where he provided worldwide hardware, software and process solutions in support of IBM's 0.35 and 0.5mm CMOS technologies. While at *IBM*, Dr. Grimard was recognized for his technical achievements when IBM presented him a First Plateau Award (1995), a corporate Blue Chip Award (1995), an Outstanding Technical Achievement Award (1995) and a First Patent Award (1995). Currently, Dr. Grimard is with The University of Michigan where he is a Research Scientist and Laboratory Manager for the Solid-State Electronics Laboratory. Dr. Grimard's major research interests lie in the field of RF metrology as it pertains to RIE process control. Since his doctoral work, he has co-authored several papers dealing with the theoretical and practical limitations of RF metrology and feed-forward control. He has been a consultant for the semiconductor industry since 1994, where he jointly holds ten patents on electrostatic chuck technology. He is also a joint author on another eighteen patents currently under review by the US patent office. He is a member of Tau Beta Pi, Eta Kappa Nu and has been an *IBM* (1988, 1989) and DeVlieg (1986, 1987) Fellow. He also received the Salisbury award from Worcester Polytechnic Institute in 1979.

Mark Albert, Legal Counsel and Secretary of the Board

Mr. Albert is a partner at Perkins & Coie LLP and his practice focuses on the representation of emerging growth companies, venture capital funds and investment banks.

Positions to be Filled Upon Initial Sale and Equity Investment

Initial productization and a first sale will be completed by the founding team. Management intends to build upon the expertise of the founding team and advisory board by hiring new associates to fill the following positions once an initial sale of the DMC product is secured and an equity investment is made:

Director of Marketing & Sales

The Director of Sales & Marketing position must be filled with an experienced sales and marketing professional from the semiconductor industry. *Mobius* intends to locate an office for this key position in the Silicon Valley area of Northern California, as a majority *Mobius*' customer base has operations in or around this area. A search to locate qualified candidates is currently underway by the founding team.

Microsystems Engineer

The Microsystems Engineer will be responsible for MEMS technology design and integration. This person will be responsible for identifying applications where MEMS technology will demonstrate significant value added in *Mobius* products.

Analog/Radio Frequency Circuit Engineer

The Analog/Radio Frequency Circuit Engineer is responsible for specifying and managing the development of the analog transistor electronics.

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Mixed-Signal Engineer
The Mixed-Signal Engineer is responsible for integrating the resulting efforts of the other engineering disciplines.

Industry and Market

Industry Analysis

The semiconductor industry is currently one of the largest in existence with an estimated $151 billion in total sales for 2002, up from $141 billion in 2001 (Gartner, 2002). Due to the fact that semiconductors play a part in so many segments of the world economy, the industry is largely influenced by macroeconomic factors. Industry projections show sales growing 21% in 2003 and again in 2004 (S&P, 2002). In general, the semiconductor industry is maturing, with large volumes of business becoming commoditized. The current discrete clock generation market is a good example of this fact as there is little product differentiation among vendors and very thin margins.

The semiconductor industry was born and still thrives because electronic product engineers realize that they can deliver better products at lower cost by combining more functions into a single integrated circuit, or chip. The development of system-on-chip technology is a recent manifestation of this 25+ year trend. Consumer devices such as cell phones and digital cameras would not nearly be as prevalent if not for the affordability and functionality of system-on-chip devices. Demand for inexpensive electronic products such as these have focused the industry on even higher levels of on-chip integration. Accordingly, the SoC segment is a bright spot within the semiconductor industry, with growth rates in the 25% range (Gartner, 2002) and increased acceptance into a wide array of end-market applications.

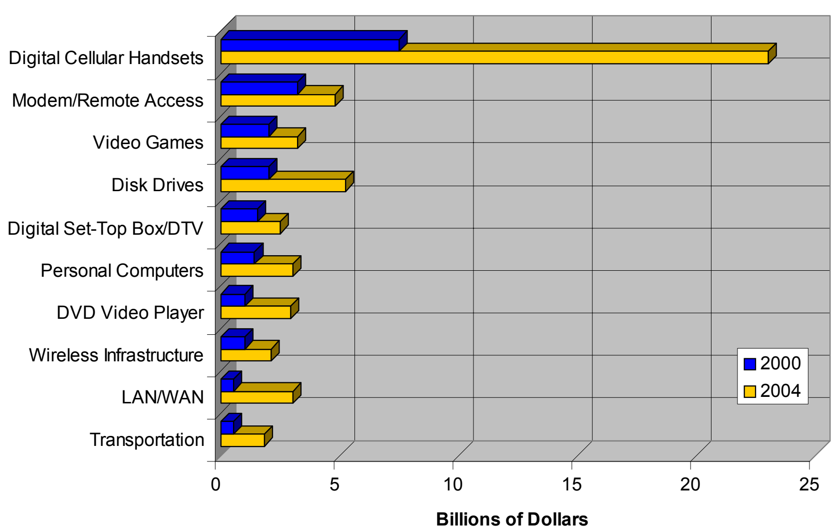

Figure 2: Top 10 worldwide SoC applications (*Source: Gartner Dataquest, 2001*)

Dataquest estimates the market for system-on-chip products was approximately $32 billion in 2002, and is expected to grow to approximately $60 billion by 2004. The reasons more products are using SoC designs are clear: SoC products are functionally superior, smaller size, lower cost, and consume less power than discrete component systems or multiple chip systems. Individually or in combination, the many benefits of SoC technology lead to better end-products such as cell phones, PDAs, video gaming systems, hard disk drives, and a plethora of consumer electronics. At left is a graph that illustrates the top 10 worldwide SoC applications and their relative market sizes for 2000 and 2004. Within these end markets, SoC technology is particularly taking over the application-specific integrated circuit (ASIC) market, and its sister market, the application-specific standard products (ASSP) market. ASICs are typically designed for one product or use such as one line of cell phones for one customer, while ASSPs could be designed for various manufacturers' cell phones and sold through distributors. ASIC and ASSP system-on-chips can include microprocessors, microcontrollers, and programmable logic devices. In every case, SoC components enable designers and manufacturers push more functional products to market in a shorter time period.

Third-party intellectual property is a key driver of the SoC market. Gartner states:

> *"Semiconductor intellectual property is taking center stage as the industry moves to system-level ICs* [*i.e. SoCs*]. *Chip suppliers and system designers are desperately searching for intellectual property that can help differentiate their prod-*

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ucts and help improve their time to market without being burdened with the total R&D cost. The third-party intellectual property market has emerged as the answer."

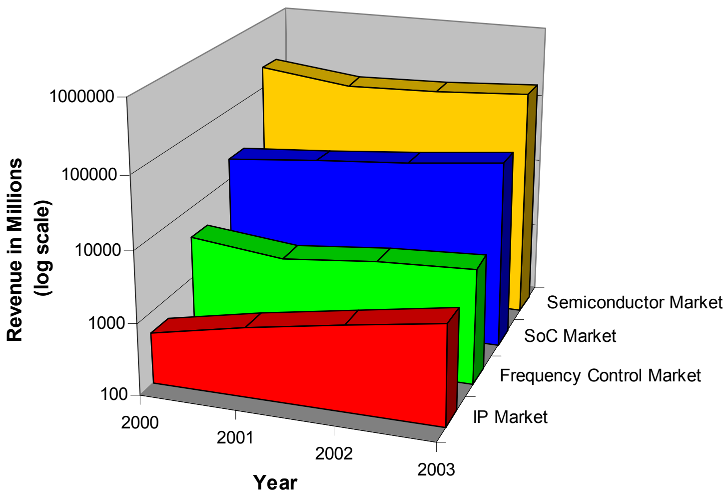

Figure 3: Relevant market growth trends (*Source CSFB, 2001*)

As the complexity of integrated circuit designs continue to grow, suppliers are becoming more dependent on outside IP development to deliver value to their customers and hit market windows. Rather than designing every component in-house, the IP market allows designers and manufacturers to simply purchase needed components from companies with focused expertise and drop the IP into their designs. IP is purchased during the system design phase of a product's development cycle, when the chip design team must figure out what parts of the chip's design they own or can produce, and what parts they must source from third-party vendors such as *Mobius*. The semiconductor IP industry reached approximately $892 million in revenue in 2001, up from $714 million in 2000 (Gartner). These figures do not include clock generation IP, as there currently is no such solution in the IP market. Intellectual property revenues are dominated by *ARM*, *MIPS*, and *Rambus*, whose IP is very broad-based in its application. These companies have been very successful by creating IP blocks that have become industry standard in microprocessing and memory.

Mobius' DMC technology has broader market application than any current IP block on the market. Every single synchronous semiconductor device manufactured requires a clock to operate. Additionally, there is not another clock generator on the market today that can profess the same capabilities as the *Mobius* DMC. *Mobius* aims to capture industry standard status within the clock generation IP market.

The growth of the aforementioned industries and markets is captured in Figure 3 above. The trends show significant growth in the IP market which is feeding growth in the SoC market. Also shown is the incumbent frequency control market, which as a whole is tremendously large. *Mobius* intends to use its DMC IP to capture the initial market of frequency control in SoC applications, as described in the following section.

Initial Target Market Analysis

The initial target market for *Mobius*' DMC is the SoC market for a variety of end-market applications. The DMC addresses key demands in almost every semiconductor market segment (small-size, high-performance, low-power, more-flexible, low-cost). The SoC segment's comfort with IP usage, high sensitivity to power consumption, varied end-market use, and rapid growth rates make it a particularly attractive initial market. Assuming a total market size of $32 billion and a very conservative SoC average selling price of $20 per unit, the SoC market represents a total opportunity of 1.6 billion units manufactured annually. Multiplying by an average selling price of $0.45 per DMC (as detailed in the financials section of this plan), *Mobius*' first product claims a total addressable market of greater than $720 million per year in the SoC segment alone. Figure 4 breaks down and illustrates this initial high-growth market opportunity.

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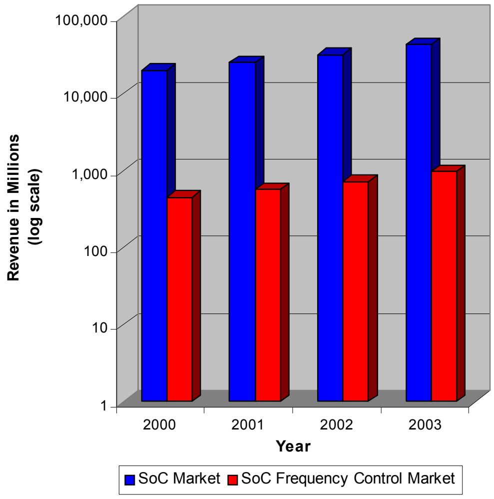

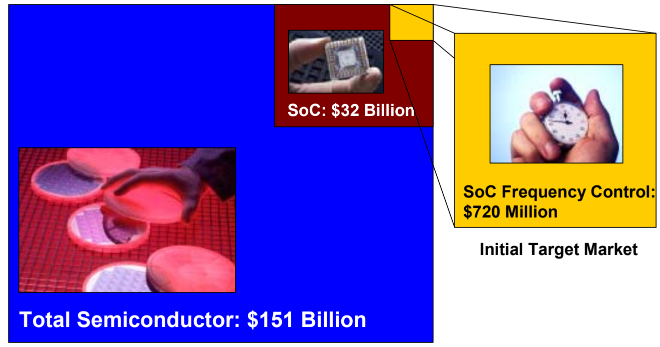

Figure 4: Total addressable market in SoC frequency control and market breakdown (*Source iSuppli, Gartner, Semico*)

Customer Segmentation

Mobius' initial target market can be segmented into end-product applications as represented by Figure 2 shown previously. Potential customers can be further segmented into the kinds of companies that operate within the semiconductor supply chain. Sales of the *Mobius* DMC will be to one of four kinds of companies. These companies are summarized in the table below.

Type of Company	Function	Example
Integrated Device Manufacturer (IDM)	Designs and manufactures entire systems using own designs as well as third party IP	*Sony*
Integrated Circuit Manufacturer	Designs and manufacturers semiconductor products using own designs as well as IP	*Motorola*
Fabless Semiconductor Company	Designs semiconductor products, often with third party IP, and outsources manufacturing	*Broadcom*
Chip Design House	Designs semiconductor products, often with third party IP, for use by customers	*Synopsys*

Table 5: Types of SoC companies

In some cases, another potential licensee of *Mobius* IP will be semiconductor fabricators (e.g. *TSMC*), however this is not anticipated in the first few years of sales. IP partnerships will be established with the above four kinds of customers through their existing IP partnership programs, and then marketing efforts will focus upon getting "designed-in" to the designs of new electronic products. Obtaining design wins will involve direct sales by the *Mobius* team or hired technical sales representatives who will sell electronic product engineering managers on the benefits of including the *Mobius* DMC in their next system design.

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Corporate Strategy

Competition

As described previously, *Mobius*' initial product, the DMC, will compete with three existing technology options for clock generation that are available to customers. They are:

- Fully discrete components using crystal technology (moderately common)
- Fully integrated electronics using a ring oscillator or similar technology (rare)
- A hybrid of discrete and integrated components using off-chip crystals and on-chip oscillators (most common)

Current competition exists from different sources as a result of these options. These competitors include the following:

- Discrete crystal oscillator manufacturers: *Epson*, *NDK*, *Toyocom*
- Integrated clock manufacturers: Various integrated circuit companies, such as *Motorola*, *Analog Devices*, and *Texas Instruments,* can build on-chip ring oscillators
- Hybrid clock manufacturers: Various integrated circuit design companies, such as *Motorola*, *Analog Devices*, and *Texas Instruments,* can build on-chip oscillators with off-chip crystals from companies such as *Epson*, *NDK*, or *Toyocom*. Hybrid clock IP is also available from a variety of sources.

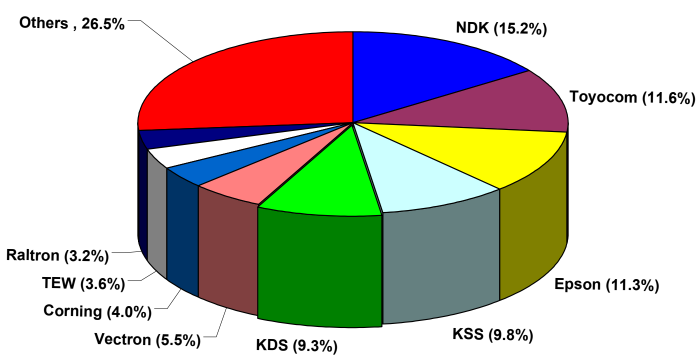

Figure 5: Frequency control market share in 2001

Integrated and hybrid clock technology is not novel. An electrical engineer with an adequate circuits background could develop such technology. To *Mobius*' knowledge and through the research executed for the patent applications of the DMC, there are currently no semiconductor companies actively attempting to develop high-performance on-chip clock generation. Given the existing technology options, the incumbent suppliers of discrete crystals and oscillators are the most exposed to the DMC product. These crystal and oscillator products are essentially commodities, with a few large players dominating the market. *iSuppli* estimates the total revenue for crystals and oscillators in 2001 was approximately $3 billion, with the main suppliers being *Epson*, *NDK*, and *Toyocom*. The expected response to the DMC from companies such as these is limited. Crystal technology's application is much broader than semiconductor products exclusively and *Mobius*' initial target market is a mere fraction of the total market addressed by these companies. Since the current products are commodities, there is very little room to compete on price. Also, these companies have no expertise developing microsystems technology. Unlike the DMC, which is a high-performance, tunable, low-power, integrated solution, crystals are relatively large, expensive, fixed-frequency, discrete devices. The growth rate of the existing frequency control market closely follows the overall semiconductor growth rate at approximately 8% CAGR. Figure 5 shows the leading frequency control circuit suppliers market share in 2001.

The vast majority of on-chip clock implementations are used in low-end microcontrollers and field programmable gate arrays operating below 50 MHz. *Mobius*' DMC is high-performance and can generate frequencies up to 1 GHz. Microcontroller manufacturers have long realized the value of on-chip clocks in reducing cost and power consumption. Nevertheless, the uses of existing on-chip clock designs are limited to low performance applications due to unacceptable frequency accuracy and stability.

Because the benefits of an on-chip clock are so compelling, any traction the *Mobius* DMC gains will likely attract other semiconductor companies to attempt to offer a similar product. Likely potential competitors include companies with microsystems

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expertise, such as *Motorola* and *Analog Devices*. The *Mobius* team believes that start-up companies pose the greatest threat initially. Large companies are unlikely to move into the market until *Mobius* has garnered a significant revenue stream by displacement of the entrenched technology. *Mobius* addresses these threats with its competitive advantage and countermeasures to risk as discussed in the sections that follow.

Intellectual Property Strategy and Sustainable Competitive Advantage

Mobius will continue to bring emerging and patent-protected technologies to market for its customers. As such, *Mobius*' intellectual property strategy and competitive strategy are strongly focused on continued innovation and intellectual property protection. The following four points highlight the ways in which *Mobius* will create and sustain its competitive advantage:

1. The *Mobius* technical team has developed a robust intellectual property portfolio around the DMC. Provisional patent applications were filed throughout 2002 and full utility patents will be filed with the USPTO in February, 2003. These patents will be protected by The University of Michigan.
2. *Mobius* is several design cycles ahead of any competitor in its microsystems development and this lead has enabled the company to develop state-of-the-art trade secrets around its design methodology and framework. This unique design framework will allow *Mobius* to innovate and bring future IP to market at a faster rate than its competitors.
3. *Mobius* will maintain a “product-hopping” development strategy in which *Mobius* will ride out the profitability of each new innovation. Technologies will be sold rather than licensed when support of them is no longer cost effective due to price reductions from competition or introduction of next generation product lines.
4. *Mobius* plans to leverage its strong ties to one of the top microsystems research communities in the world, through its relationship with The University of Michigan and The Center for Wireless Integrated Microsystems. Through these relationships, *Mobius* has “first-look” rights for leading-edge technologies developed within the research center as well as the ability to direct research dollars toward *Mobius*' areas of interest.

Marketing Strategy

As previously mentioned, *Mobius* plans to achieve market leadership in the very broad clock generator market. The *Mobius* DMC can become the de-facto standard in clock generation, very similar to *ARM*'s IP-based microprocessor cores. Exclusive licenses will be negotiated for *Mobius*' first few customers for a limited period of time. Once exclusivity periods have expired with these product segment leaders, the DMC will have become a necessary product for companies chasing *Mobius*' initial customers. Alliances throughout the semiconductor supply chain will be sought and utilized to strengthen the DMC's momentum. Such status will afford *Mobius* market-leader benefits such as economies-of-scale and margins above the industry average.

Mobius' initial marketing strategy will be to educate the market on the capability of the DMC technology through conferences, trade shows, publications, and industry web sites, while directly selling to established contacts in the industry. Personal relationships have already been established with leading semiconductor product manufacturers and these will be tapped for *Mobius*' initial sales effort.

Beyond its network, management will attempt to create substantial “buzz” around *Mobius* by including the DMC on several cutting-edge prototypes in different application areas, as it has already done within the research environment. Further, *Mobius* will market its technology to publications and organizations that hold competitions for product and design awards, enabling the company more chances to win additional accolades and positive publicity.

Mobius will partner with the leading IC design teams in the four kinds of companies mentioned previously. Becoming an IP partner in most cases will simply require joining already established IP partner programs. Once *Mobius* has the ability to be included in these companies' designs, a direct sales effort will be required at the system level to be “designed-in” a product application such as a cell phone. This will mean selling system engineering managers on the value that *Mobius* will bring to their products. A design-win will then pull royalty revenue through the IC designers. The founding team will lead the initial sales effort although a director of marketing and sales will be added to the team to lead the effort in Q3 2003.

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Product

Mobius plans to sell IP licenses to system engineers within design houses, fabless semiconductor companies, integrated circuit manufacturing companies, and integrated device manufacturing companies. Included with the license will be a compatible software package, which will allow customers to simulate *Mobius*' designs within the specific integrated circuit that they are producing and then ultimately place the macro, or blueprint, for manufacturing the DMC into the final product. *Mobius* will also offer services to facilitate the incorporation of the DMC into the customer's integrated circuit.

Price

Realistically, it is understood that each IP license within the semiconductor industry is valued on a deal-by-deal basis. Exclusive licenses have more value than commodity IP, as do the more critical components versus those with lower importance to the overall design. While market conditions will ultimately dictate *Mobius*' pricing strategy, management anticipates that pricing for the DMC will be straightforward and aligned with current industry practices. Initial prices are projected to be in the range of $100K to $300K for each license, depending on the number of end product units produced. Additionally anticipated in the contract will be a $0.15 to $0.50 royalty per chip, inversely proportional to the license fee and unit volume. Thus a tiered pricing structure will be utilized that allows customers to realize a cost decrease per unit as volume increases. This structure is detailed in the business system section.

Place

Initial distribution will likely occur via compact disk, which will contain the necessary intellectual property and software for the DMC's application. Secure Internet technology will likely facilitate later distribution. As mentioned above, management will be the primary sales team at first with additional sales team members added as the business progresses. *Mobius*' initial IP-based business model eliminates the need for costly warehousing and delivery functions. Wherever possible, low-cost e-business channels will be utilized for sales and/or distribution.

Promotion

Initial promotion of *Mobius*' products will largely consist of utilizing personal relationships as well as market education and evangelism. Every attempt will be made to gain exposure through company, product, or technology publicity; trade show presence; and awards. Beyond initial low-cost promotional efforts, presence on industry websites and direct sales by the management team and hired technical sales representative organizations such as *Voyageur* will be *Mobius*' main methods of promotion as these are the accepted sales practices within the semiconductor industry.

The latest innovations in web advertising and the ability of periodical companies like *CMP*, *Cahners*, and *Penton* to use their web presence to promote a web-based press conference or other web-based information transfer opportunities, provide *Mobius* with a very cost effective and global resource for promotion of the DMC. Additionally, *Mobius* will be present in various semiconductor technical forums for the presentation of technical papers. The leaders in the semiconductor industry have successfully used this type of commercial push for many years. Below is a few conferences at which *Mobius* has already been invited to orally present its technology:

- ***Design Automation and Test in Europe Conference***
  Date: March 3-7, 2003
  Location: Munich, Germany
- ***International Symposium on Circuits and Systems***
  Date: May 25-28, 2003
  Location: Bangkok, Thailand
- ***Radio Frequency Integrated Circuits Conference***
  Date: June 8-13, 2003
  Location: Philadelphia, PA

SWOT Analysis

Strengths

Despite macroeconomic factors, *Mobius*' timing is a considerable strength. While still relatively immature, the IP industry has advanced considerably as vendors and buyers have become more comfortable with each other. For many SoC companies, rela-

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tionships with IP vendors can be as close as some design relationships within single IDMs. *Mobius* will be able to take advantage of new IP channels and tools such the *Virtual Component Exchange* (*VCX*), which has introduced commonality to legal contracts within the IP industry. The *VCX* maintains a web-based contract configuration that allows buyers and sellers of IP to choose from clauses that are frequently found within IP contracts. *Design and Reuse*, a global collaboration network for sharing design resources in the electronics SoC industry, is an example of the newly available sales channels. The industry's relative maturation will aide *Mobius* in getting its products to market substantially faster and with greater ease than some of its IP vendor predecessors. The added speed and acquired knowledge adds additional value to *Mobius* and its products.

Weaknesses

> *"The primary problem with IP licensing is that few suppliers have been able to establish themselves as mainstream intellectual property providers and to capture substantial profits to reinvest in the development of next-generation intellectual property."* (*Gartner, 2001*)

Historically, failure of IP businesses have stemmed from a lack of strategic planning, novel IP, and short-sighted business models. Additionally, a very small percentage of available IP has had broad-enough application to sustain a company and provide enough capital for sufficient research and development. Companies such as *Parthus*, *ARM*, *MIPS*, and *Rambus* have proven success can be achieved if the appropriate business model is in place with innovative IP and the necessary strategic planning has been performed.

Opportunities

> *"Semiconductor intellectual property is taking center stage as the industry moves to system-level ICs. Chip suppliers and system designers are desperately searching for intellectual property that can help differentiate their products and help improve their time to market without being burdened with the total R&D cost."* (*Gartner, 2002*)

> *"System-level integration* (*SLI*) *or system-on-chip* (*SoC*) *is the most important development in the semiconductor industry since the advent of the microprocessor 20 years ago."* (*Gartner, 2001*)

SoC has made and will continue to make seemingly complex electronic systems very affordable. As SoC components continue to spread to additional electronic products, opportunities for IP blocks to become de-facto standards increase substantially. *Mobius*' DMC has the potential to become the de-facto standard for SoC clock generation in a $60 billion system-on-chip market by 2007.

Threats

Given the size of *Mobius*' opportunity, potential for competing products that come about through reengineering efforts do pose a threat in the long term. In the short term, intellectual property protection and necessary research and development efforts limit this competition. *Motorola* and *Analog Devices* are two example companies with the capabilities, resources, and focus to develop a competing product. Specifically, these companies possess not only design and manufacturing capabilities in-house, but they also have experience commercializing microsystems products. It is important to note that both of these companies develop IP exclusively for internal use. Moreover, their IP is typically maintained as proprietary in order for each company to deliver competitive semiconductor components. If *Motorola* or *Analog Devices* chose to reengineer a competing product, at worst *Mobius* would be locked out of their product lines.

An additional threat to *Mobius* is the system design change which the DMC's adoption requires system engineers to make. In moving from a discrete crystal-based clock generator to the *Mobius* on-chip clock, the overall system must be designed to exclude the discrete component and instead utilize the on-chip function. This represents a substantial change in traditional system design. Most likely *Mobius*' DMC will be incorporated into new products where this is not a problem.

While the DMC does represent a shift for system engineers, the prevalent trend of moving discrete components on-chip is well accepted. *Mobius* is confident that the value the DMC creates for system designers is substantial enough to warrant a design change. The movement of memory on-chip is one example of how increased performance and value can enable such a change across a wide variety of end-products.

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Business System

Revenue Model

Significant research was obtained on existing IP vendors as well as competing clock technologies. This data, along with *Mobius*' cost structure, and a price point necessary to achieve market penetration were all evaluated to determine the following revenue model. The model is made up of the following five components:

1. **Initial license fee:** This fee is paid per customer product line in two equal installments. The first installment is paid upon the signing of the license agreement, the second installment is due upon final acceptance of the IP by the customer as specified in the agreement, which is anticipated to be one to two months after signing the agreement. A tiered pricing system will be utilized that is based upon the number of units shipped to end customers, with initial license fees ranging from $100,000 to $300,000. *Mobius* expects a 40%, 40%, 20% mix of license fees in the low, medium, and high volume categories, respectively. The gross margin on license fees is approximately 85%. Table 6 illustrates the tiered pricing structure.

Customer Units				
Category	**Low range**	**High range**	**Initial License Fee**	**Royalty per unit**
Low volume	> 0	<400,000	$100,000	$0.50
Medium volume	>400,000	<1,000,000	$200,000	$0.25
High volume	>1,000,000	>3,000,000	$300,000	$0.15

Table 6: License agreement pricing model

2. **Re-use license fee:** This fee is paid each time a customer reuses *Mobius* IP in a new version or model of a product that previously used the IP. For example, if a customer is producing PDA products, the customer would pay the re-use license fee each time the customer develops a new model of the product that uses *Mobius*' IP. Based on typical SoC design cycles, re-use fees are expected 9-12 months from the signing of the initial license agreement as this is the expected time that customers take to develop products. These fees will average 20% of the initial license fee with gross margins of approximately 80%.
3. **Royalty:** Royalty payments are based on the number of units shipped to end customers. Table 6 illustrates a tiered royalty pricing model, with a lower per unit royalty as unit volume increases. The combination of the initial license fee and the royalty payment is priced to be half as expensive as existing clock products on an average cost per unit basis. Royalties will be recognized and received in arrears one month after the quarter in which customers ship product, which is typically 9-15 months after the signing of the license agreement. The commencement of royalty revenue will lag other revenue sources, but it is expected to be 15-20% of revenue after 5 years. The gross margin on royalties will be in excess of 95%.
4. **Support and maintenance fees:** Customers will be generally required to purchase support and maintenance contracts to cover these services over the design and sales cycles of their products, which will be for a period of between 2 and 3 years. These fees are 15% of the initial license fee and have gross margins of 60%.
5. **Services:** Services have two components: design services for customers and research grants. Design services will be especially important to *Mobius*' initial customers, as it is expected the company will work closely with these customers to integrate *Mobius* IP with the customer's IC design. Research grants will be sought and used by *Mobius* to perform fundamental research on future products that present good opportunities for commercialization. Services are expected to have gross margins of 30%.

The initial and re-use license fees are expected to be the main drivers of revenue, accounting for 80% of revenue in 2003, but decreasing to 60% of revenues in 2007. Royalty revenue will be insignificant for the first two years of operations, and then is expected to be nearly 20% of revenue by 2007. Support and maintenance will be approximately 5% of revenue. Finally, services are expected to be 15% of overall revenue.

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The cost incurred to the customer for the *Mobius* DMC is approximately $0.45 per part at a quantity of one million units, calculated by amortizing the licensing fee and adding the royalty. *Mobius*' research estimates the average SoC product sells for $20 and an expense of $0.45 per part for clock generation has been determined to be very attractive based on direct market research.

The revenue stream will be time-sensitive. Initial contracts will bring in licensing fees early, but royalty revenue streams will not be seen until customers fabricate devices. Therefore, *Mobius* will seek to protect its revenue stream by following semiconductor design cycles closely and targeting high volume markets with quick design turnover.

Business Location and Infrastructure

Mobius is currently operating out of downtown Ann Arbor, MI. *Mobius* ultimately intends to base operations in Detroit, MI. Southeast Michigan, with the presence of the automotive industry, has become a globally recognized center for microsystems research, development, and commercialization. Currently, a breadth of talent in the field is available from The University of Michigan, Michigan State University, Michigan Technological University, Wayne State University, *Delphi*, and *Visteon*. Emerging technology is fundamental to the *Mobius* business concept and Detroit is a centralized location to recruit technical talent that will allow *Mobius* to expand to its potential.

Key aspects of *Mobius*' intended location include tax incentives and Detroit's low cost of infrastructure. *Mobius* is engaged in negotiations with the *Detroit Economic Growth Corporation* (*DEGC*) and the *Michigan Economic Development Corporation* (*MEDC*) to maximize the opportunities realized by these incentives. Specific opportunities being pursued include:

- *MEDC* High Tech Michigan Economic Growth Authority (MEGA): Rebates on state Single Business Tax (SBT) and state income tax
- *DEGC* PA-328: Detroit Personal Property Tax Abatement
- Variety of local loan programs based in Detroit

The required infrastructure for initial start-up includes only computer hardware and software for engineering, marketing, and sales activities. Hardware will be purchased from *SUN Microsystems* and *Hewlett-Packard*. Engineering software will be licensed annually from *Cadence Design Systems* and *Coventor* while general business operations software will be purchased outright.

Technology

Mobius delivers a complete environment to its customers containing simulation models for development and the design macro for manufacturing. Specifically, the environment will include:

- *VerilogA* model for macro simulation
- *Verilog* test fixture for system simulation
- Test vectors and stimulation template
- GDSII and CIF physical design files for manufacturing
- Macro documentation

Mobius will deliver the environment to each customer via a variety of media formats including secure file transfer protocol (FTP) and compact disk (CD). All formats will support secure licensing keys to protect *Mobius* from the threat of technology piracy. The initial hardware and software infrastructure will support this activity.

Future revisions and ports of *Mobius*' IP products must be prototyped at the desired manufacturing facility for verification. *Mobius* will utilize the *MOSIS* multi-user semiconductor manufacturing service for this activity. *MOSIS* provides access for low volume production at world-class semiconductor manufacturing facilities. Typical prototyping costs per 40-unit batch are approximately $20,000. *Mobius* will focus its prototyping efforts exclusively on facilities that manufacture high-volume SoC products, such as *Taiwan Semiconductor*, in order to close large-volume contracts. Figure 6 illustrates these activities.

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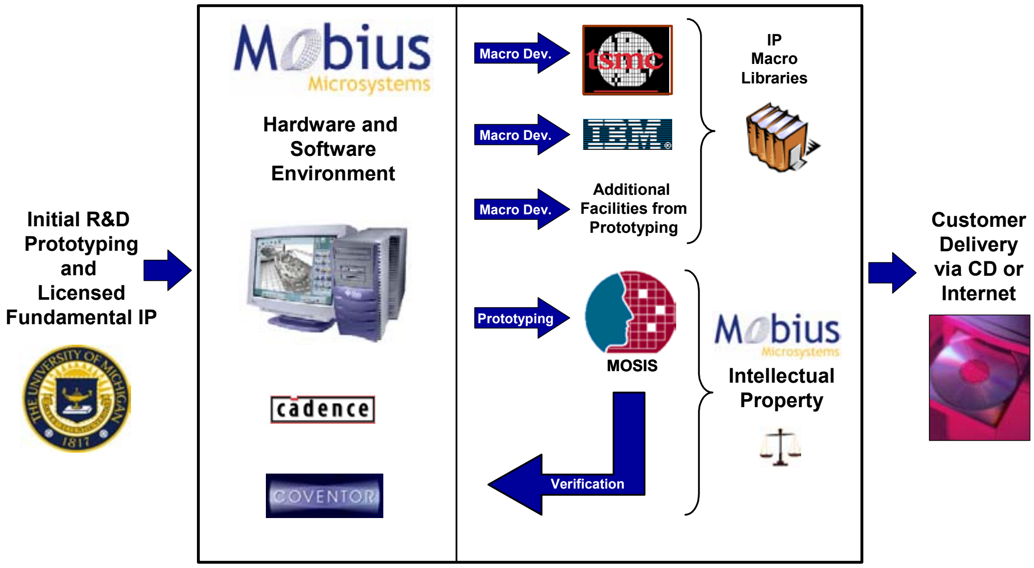

Figure 6: Mobius commercialization activities

Organizational Structure

Mobius plans to utilize a matrixed organizational structure in which functional roles of research and development, marketing and sales, and finance and administration will be assigned to project teams headed by project managers. Project managers will be responsible for all aspects of their projects including relationship management, profitability, and resource management. The *Mobius* executive team will be responsible for organizational development, assisting the project teams, directing project investment, as well as identifying new areas for investment or development. The compensation structure of the majority of *Mobius*' personnel will be heavily weighted toward incentives with a profit sharing plan and a stock ownership plan.

Research and Development Team

The initial research and development team will consist of Mr. McCorquodale as well as additional engineers as they are added. Primary tasks will be the following:

- Development of a complete macro environment around the DMC
- Development, prototyping, and test of the DMC for additional manufacturing processes
- Administration of *Mobius*' servers, networks, computers, and software

Personnel Resource Planning

The yearly personnel resource plan as discussed throughout this document is summarized in the following table.

Personnel Plan for Year Ending December 31,	2003	2004	2005
Sales and Marketing	3	5	9
Research and Development	2	4	8
General and Administrative	1	1	3
Total People (at year end)	6	10	20

Table 7: Personnel resource plan

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Partnerships

Mobius' DMC technology will be a worldwide exclusive license from The University of Michigan. *Mobius* is currently engaged in these licensing negotiations and expects to close an agreement covering both equity and royalty fees. These figures are assumed to be 3.0% and 1.5%, respectively, in the financial model of this plan.

Mobius intends to bring a wide variety of emerging microsystems technologies to fruition. As such, *Mobius* is an industrial member of the Center for Wireless Integrated Microsystems (WIMS) at The University of Michigan and anticipates similar engagements with other research institutions. As a WIMS member company, *Mobius* not only provides direction for future technology developments, but also possesses exclusive first-look licensing rights to technology developed at the Center. This annual partnership fee is $10,000.

Financial Planning

Financial Methodology

In analyzing the financial growth potential for *Mobius*, the financial plan takes into account information from the market, known licensing and royalty models, and customer input to project future profits and capital requirements. The market data is based on known usage and validated by reports published by *Gartner, Dataquest, iSuppli, Cahners*, *Semico Research Corp.* or by *CMP* publications. The pro forma income statement, balance sheet and cash flow statement were developed in a two-tiered approach. Initially costs, capital expenditures, and other items that could be accurately estimated were entered into the projections. Then comparable IP companies were used to predict the long-term cost structure and capital needs for a more mature firm.

Revenues

As explained previously, there are five primary sources of revenue: the initial IP license, a re-use license, a per unit royalty, support and maintenance, and services. *Mobius* has a reasonable expectation to generate its first IP license revenue in the third quarter of 2003. The majority of revenue during the first three years will be through initial license sales, with some re-use license revenue beginning in late 2004/early 2005. Royalty revenue will begin to flow from manufactured units during the third quarter of 2004 and is expected to grow to be nearly 20% of total revenue by 2007. Support and maintenance contracts will be entered into one month after the initial license agreement, therefore commencing in the third quarter of 2003. Services are a combination of design services to customers and research grants. *Mobius* expects to receive its first research grant in the first quarter of 2004 for $100,000. This grant should contribute $12,000 monthly to revenue for the term of the grant. The design services should commence the month after the first license sale, and generate $5,000 per month in revenue initially.

The primary driver of revenue will be license sales, as most of the other revenue sources are derived from the initial license sale. License fees will dominate revenue early, then decline to 60% of revenue by 2007. The growth of the royalty revenue will be directly dependent on additional sales of IP licenses throughout the planning period. Market growth in general has been estimated using *Dataquest* projections, among others, for the growth of the system-on-chip (SoC) markets for 2001 through 2004 as addressed previously ($32 billion in 2002 to $60 billion in 2004). These estimates show a potential market of 1.6 billion units in 2002 with an approximate growth rate of 37% annually. *Mobius* is projecting to capture 133,000 units in 2004 (0.004% of 2004 market) and 1.95 million units in 2005 (0.05% of 2005 market). *Mobius*' success will be not contingent upon becoming a major player in this market, but rather capturing only a small market share. Capturing a larger-than-projected share of this sizable opportunity would allow *Mobius* to quickly out-pace revenue projections. Additional products planned by *Mobius* represent further opportunities for growth. The pro forma financials associated with these projections can be found in the appendices.

Costs

Mobius costs are divided into two major categories: cost of revenue and operating expense. The cost of revenue is variable, with license fees, re-use licenses, and royalties all having gross margins of 80% or higher. Support and maintenance revenues have approximately 60% gross margins. Meanwhile the gross margin on service revenue is expected to be 30%. The total cost of revenue will be in the general range of 20% to 25%, with the higher end of the range in the early years due to a higher proportion of service revenue initially.

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Mobius will have three main operating expense centers: Research & Development, Marketing & Sales, and General & Administrative. All three operational centers represent a relatively fixed level of costs driven by personnel numbers in each area and are estimated individually for each operating expense center. The long-term business model (after 5 years of operations) projects operating expenses for Sales & Marketing, Research & Development, and General & Administration of 25%, 20%, and 8% of revenue, respectively. This expense business model is comparable to other relatively mature companies in this market segment.

The majority of operating expenses are directly related to the number of employees. It is anticipated that the vast majority of employees will have advanced degrees, especially in research and development, where many will have doctoral degrees in electrical engineering and computer science. Therefore the average annual salary per employee is estimated at $100,000. In addition to expenses directly associated with personnel, an investment in the range of $25,000 to $50,000 in computer hardware and software equipment is anticipated for each research and development employee.

Breakeven and Positive Cash Flow

IP license revenue is expected to remain the dominant source of revenue, especially during the first couple years of operations, with likely discontinuous steps of revenue from license sales. With IP licenses priced at $100,000 to $300,000, the timing of these license sales will have a dramatic effect on the profitability and the cash flow of a particular month and/or quarter.

The technology licensed from the University of Michigan should be ready for commercialization at the start of the second quarter of 2003. Discussions with several potential IP license customers indicate a likelihood of closing several licenses within the first nine months of operations. The current forecast of sales is two IP license sales during the third quarter and two license sales during the fourth quarter of 2003. A loss is expected for 2003, as well as a loss in the first quarter of 2004. *Mobius* expects to be consistently profitable starting the second quarter of 2004 with consistent sales of IP licenses, and the steady ramp-up of royalty revenue commencing during the third quarter of 2004.

Cash flow from operations is negative from 2003 until the first quarter of 2005. Cash flow is approximately break-even during the period spanning the second quarter of 2005 through the second quarter of 2006. Thereafter consistent positive cash flow is expected starting the third quarter of 2006. Accounts receivable is expected to require substantial amounts of working capital if *Mobius* agrees to the current industry practice to receive royalty payments every six months. *Mobius* will negotiate for better payment terms for this revenue type, or obtain a line of credit against these receivables to counter any shortfall in working capital.

Financial Planning, Equity, and Cash Management

Mobius intends on commencing operations in the first quarter of 2003 with an initial staff of four people. Based on the pro forma financials in the attached appendix, *Mobius* executive management is very committed to a constant focus on cash and cash management. *Mobius* has made every effort to research and understand the startup costs of this venture and post startup business expansion. To that end, *Mobius* has taken great care in planning its equity funding efforts that support this business plan.

Initially, *Mobius* will require $500,000 in equity funding during the third calendar quarter of 2003. This equity will be generated through an angel/venture capital funding round after *Mobius* has completed its initial IP license sale to a customer. The effective operation of the venture through 2003 depends on the use of these funds as scheduled for the following:

- Hiring and development of a professional marketing and sales team
- Customization of the technology for additional manufacturing processes
- R&D for enhancements to the DMC
- R&D to ramp new product introductions

A second investment round of $500,000 may be sought six to nine months after the first round investment. The additional capital will be used for the following:

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- Hire and develop a sales team to ramp sales in Europe and Asia Pacific
- Commercialization of the AFE product

The table below provides a comparison of net revenue, expense, and net income, as well as equity capital proceeds and cash flow, for the period from 2003 to 2007.

Pro Forma FInancials (in thousands) Fiscal Year Ending December 31,	2003	2004	2005	2006	2007
Total Revenue	573	2,813	7,071	12,469	19,408
Gross Profit	463	2,153	5,388	9,528	15,017
Operating Income (loss)	(181)	(138)	1,134	2,532	4,708
Net Income (loss)	(181)	(135)	809	1,526	2,843
Equity Capital Proceeds	610	500	—	—	—
Cash Flow (after equity proceeds)	315	310	343	944	2,001

Table 8: Mobius' Pro Forma Financials from FY 2003 to 2007

Exit Strategy

The *Mobius* founding team is committed to building a lasting enterprise capable of creating significant value for shareholders and customers. The pro forma financials, built upon the execution strategies and market potential detailed in the previous sections, indicate that *Mobius* is positioned to scale its business, grow at high growth rates for many years, and realize substantial profit margins. The *Mobius* management team will continually seek opportunities to maximize shareholder value. These opportunities may present themselves through various liquidity alternatives, such as an IPO, merger, acquisition, or buy-out. Throughout the semiconductor IP industry, there are many precedents for each liquidity event.

Any exit strategy defined at this time is very speculative in nature. Over the course and execution of this business plan, the *Mobius* management team and board of directors will review exit strategy options as necessary to provide a value based evaluation of each opportunity.

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Appendix 1: Annual Statement of Income

MOBIUS MICROSYSTEMS, INC.
ANNUAL PRO FORMA STATEMENT OF INCOME FOR THE PERIOD OF 2003 THROUGH 2007

	Year Ended December 31,				
in thousands	2003	2004	2005	2006	2007
Revenue:					
IP Licenses, Royalties, and Support and Maintenance	$ 508	$ 2,498	$ 6,146	$ 10,774	$ 16,883
Services	65	315	925	1,695	2,525
Total Revenue	573	2,813	7,071	12,469	19,408
Cost of revenue:					
IP Licenses, Royalties, and Support and Maintenance	86	439	1,036	1,755	2,624
Services	25	221	648	1,187	1,768
Total cost of revenue	110	659	1,684	2,941	4,391
Gross Profit	463	2,153	5,388	9,528	15,017
Operating Expenses:					
Sales & Marketing	319	1,144	1,992	3,318	4,834
Research & Development	184	774	1,544	2,552	3,879
General & Administrative	141	374	718	1,127	1,596
Total operating expense	644	2,292	4,254	6,996	10,309
Operating income (loss)	(181)	(138)	1,134	2,532	4,708
Other income, net	1	3	5	11	31
Income before income taxes	(181)	(135)	1,139	2,543	4,738
Provision for income taxes	-	-	329	1,017	1,895
Net income (loss)	$ (181)	$ (135)	$ 809	$ 1,526	$ 2,843

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Appendix 2: Annual Balance Sheets

MOBIUS MICROSYSTEMS, INC.
ANNUAL PRO FORMA BALANCE SHEETS FOR THE PERIOD OF 2003 THROUGH 2007

	Year Ended December 31,				
in thousands	2003	2004	2005	2006	2007
Assets:					
Cash and cash equivalents	$ 321	$ 631	$ 975	$ 1,919	$ 3,919
Accounts receivable, net	$ 180	$ 394	$ 1,236	$ 2,243	$ 3,738
Prepaid and deferred expenses	7	7	15	25	38
Total current assets	508	1,032	2,225	4,187	7,695
Property and equipment, net	92	125	208	278	332
Other assets	-	-	-	-	-
Total assets	$ 600	$ 1,157	$ 2,433	$ 4,465	$ 8,028
Liabilities and Shareholder's Equity					
Current liabilities:					
Borrowings under lines of credit	$ -	$ -	$ -	$ -	$ -
Current portion of long term debt	27	43	69	42	15
Accounts payable	45	94	154	222	337
Accrued expenses	20	35	198	452	806
Deferred revenue	27	143	343	595	889
Total current liabilities	118	314	764	1,312	2,047
Long term debt, less current portion	45	40	57	15	(0)
Shareholder's equity					
Common stock	114	114	114	114	114
Preferred stock	500	1,000	1,000	1,000	1,000
Current income (loss)	(181)	(135)	809	1,526	2,843
Retained earnings (losses)	4	(177)	(312)	498	2,024
Total shareholder's equity	438	803	1,612	3,138	5,981
Total liabilities and shareholder's equity	$ 600	$ 1,157	$ 2,433	$ 4,465	$ 8,028

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Appendix 3: Annual Cash Flows

MOBIUS MICROSYSTEMS, INC.
ANNUAL PRO FORMA STATEMENT OF CASH FLOWS FOR THE PERIOD OF 2003 THROUGH 2007

	Year Ended December 31,				
in thousands	2003	2004	2005	2006	2007
Cash flows from operating activities:					
Net Income	$ (181)	$ (135)	$ 809	$ 1,526	$ 2,843
Add items not requiring cash in the current period					
Depreciation and amortization	8	27	50	78	110
Changes in assets and liabilities					
Prepaid and deferred expenses	(7)	-	(8)	(10)	(13)
Accounts receivable	(180)	(214)	(842)	(1,007)	(1,495)
Other assets	-	-	-	-	-
Accounts payable	45	49	61	68	115
Accrued expenses	20	16	163	255	354
Deferred revenue	(252)	(142)	433	1,162	2,207
Net cash provided (used) by operating activites	(268)	(142)	433	1,162	2,207
Cash flows from investing activities					
Capital expenditures	(98)	(60)	(133)	(149)	(164)
Net cash used in investing activities	(98)	(60)	(133)	(149)	(164)
Cash flows from financing activities					
Net borrowings (payments) under line of credit agreements	-	-	-	-	-
Proceeds from issuance of stock	610	500	-	-	-
Net borrowings (payments) of long term debt	71	12	43	(69)	(42)
Net cash provided by (used in) financing activities	681	512	43	(69)	(42)
Net increase (decrease) in cash	315	310	343	944	2,001
Cash at beginning of period	6	321	631	975	1,919
Cash at end of period	$ 321	$ 631	$ 975	$ 1,919	$ 3,919

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Appendix 4: Financial Statement Assumptions

MOBIUS MICROSYSTEMS, INC.
FINANCIAL STATEMENT ASSUMPTIONS

Income Statement Assumptions

Revenue:

- IP License Revenue will be recognized at license agreement signing and after the shipment of any necessary materials and documentation.
- IP Royalty Revenue will be recognized when royalty reports are received from customers on a monthly basis.
- Support and Maintenance will be recognized monthly over the length of the contract.
- Service Revenue will be recognized on a completion of contract basis.

Expense:

- Cost of revenue will be recognized at the same time revenue is recognized for each respective revenue line item.
- The majority of operating expenses are directly related to personnel costs with salaries based upon competitive compensation for advanced degree employees (average salary approx. $100,000/yr.).
- The combined tax rate is assumed to be 40%.

Balance Sheet Assumptions

- Accounts receivable - IP licenses are paid in two installments, first within thirty days of contract signing, the second installment within 60 days. IP Royalty is paid every 6 months, 45 days after the end of each quarter. Maintenance and Support is paid within 60 days of the start of the contract period. Services are paid within thirty days of monthly billings.
- Depreciation is based upon an average of five-year lives on a straight-line basis.
- Debt amounts represent bank loans to fund furniture and equipment.
- Accrued expenses represent taxes, outside accounting fees, and annual report fees: taxes paid quarterly, accounting and annual report fees paid annually.
- Accounts Payable based upon a 30-day payment cycle.

Cash Flow Statement Assumptions

- Founders stock is represented by common stock invested prior to start-up of operations and the above reporting periods.
- Preferred stock represents investors: Angel/venture capital investment of $500,000 Aug. 2003 and second round of $500,000 Mar. 2004.

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Appendix 5: Quarterly Statement of Income

MOBIUS MICROSYSTEMS, INC.
QUARTERLY PRO FORMA STATEMENT OF INCOME FOR THE PERIOD OF 2003 THROUGH 2005

	For The Fiscal Quarter Ending											
in thousands	3/31/03	6/30/03	9/30/03	12/31/03	3/31/04	6/30/04	9/30/04	12/31/04	3/31/05	6/30/05	9/30/05	12/31/05
Revenue:												
IP Licenses, Royalties, and ME&S	$ -	$ -	$ 201	$ 307	$ 315	$ 626	$ 728	$ 830	$ 1,148	$ 1,453	$ 1,670	$ 1,875
Services	-	35	10	20	42	76	91	106	175	220	245	285
Total Revenue	$ -	$ 35	$ 211	$ 327	$ 357	$ 702	$ 819	$ 936	$ 1,323	$ 1,673	$ 1,915	$ 2,160
Cost of revenue:												
IP Licenses, Royalties, and ME&S	-	-	34	52	55	109	128	146	195	245	283	313
Services	-	4	7	14	29	53	64	74	123	154	172	200
Total cost of revenue	-	4	41	66	85	163	192	220	318	399	454	512
Gross Profit	$ -	$ 32	$ 171	$ 261	$ 272	$ 539	$ 627	$ 716	$ 1,005	$ 1,274	$ 1,460	$ 1,648
Operating Expenses:												
Sales & Marketing	-	41	100	178	243	262	282	357	406	470	511	605
Research & Development	3	2	56	123	157	170	206	240	292	371	421	460
General & Administrative	-	21	46	74	80	88	96	110	146	155	201	216
Total operating expense	3	64	203	374	480	520	585	707	845	995	1,133	1,281
Operating income (loss)	$ (3)	$ (33)	$ (32)	$ (113)	$ (209)	$ 19	$ 42	$ 9	$ 161	$ 279	$ 327	$ 367
Other income, net	-	-	0	0	0	1	1	1	1	1	1	2
Income before income taxes	(3)	(33)	(32)	(113)	(208)	20	43	10	162	280	328	369
Provision for income taxes	-	-	-	-	-	-	-	-	-	50	131	148
Net income (loss)	(3)	(33)	(32)	(113)	(208)	20	43	10	162	229	197	221

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Appendix 6: Quarterly Balance Sheets

MOBIUS MICROSYSTEMS, INC.
QUARTERLY PRO FORMA BALANCE SHEETS FOR THE PERIOD OF 2003 THROUGH 2005

	For The Fiscal Quarter Ending											
in thousands	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05
Assets:												
Cash and cash equivalents	$ 3	$ 118	$ 469	$ 321	$ 617	$ 622	$ 612	$ 631	$ 512	$ 668	$ 826	$ 975
Accounts receivable, net	-	-	120	180	192	244	341	394	678	868	1,061	1,236
Prepaid and deferred expenses	-	-	3	7	7	7	7	7	15	15	15	15
Total current assets	3	118	591	508	816	873	960	1,032	1,205	1,550	1,901	2,225
Property and equipment, net	2	2	97	92	87	141	133	125	117	237	223	208
Other assets	-	-	-	-	-	-	-	-	-	-	-	-
Total assets	5	120	688	600	903	1,013	1,092	1,157	1,321	1,788	2,124	2,433
Liabilities and Shareholder's Equity												
Current liabilities:												
Borrowings under lines of credit	-	-	-	-	-	-	-	-	-	-	-	-
Current portion of long term debt	-	-	27	27	27	43	43	43	43	78	76	69
Accounts payable	-	34	40	45	60	68	77	94	98	112	126	154
Accrued expenses	-	4	11	20	7	15	24	35	10	72	166	198
Deferred revenue	-	-	9	27	42	76	105	143	176	245	295	343
Total current liabilities	-	38	86	118	135	202	249	314	327	507	663	764
Long term debt, less current portion	-	-	51	45	38	62	51	40	30	87	70	57
Shareholder's equity												
Common stock	4	114	114	114	114	114	114	114	114	114	114	114
Preferred stock	-	-	500	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Current income (loss)	(3)	(36)	(68)	(181)	(208)	(188)	(145)	(135)	162	391	588	809
Retained earnings	4	4	4	4	(177)	(177)	(177)	(177)	(312)	(312)	(312)	(312)
Total shareholder's equity	5	83	551	438	729	750	792	803	964	1,194	1,391	1,612
Total liabilities and shareholder's equity	$ 5	$ 120	$ 688	$ 600	$ 903	$ 1,013	$ 1,092	$ 1,157	$ 1,321	$ 1,788	$ 2,124	$ 2,433

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Appendix 7: Quarterly Cash Flows

MOBIUS MICROSYSTEMS, INC.
QUARTERLY PRO FORMA STATEMENT OF CASH FLOWS FOR THE PERIOD OF 2003 THROUGH 2005

	For The Fiscal Quarter Ending											
in thousands	Mar-03	Jun-03	Sep-03	Dec-03	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05
Cash flows from operating activities:												
Net Income	(3)	(33)	(32)	(113)	(208)	20	43	10	162	229	197	221
Add items not requiring cash in the current period												
Depreciation and amortization	-	-	3	5	5	6	8	8	8	12	15	15
Changes in assets and liabilities												
Prepaid and deferred expenses	-	-	(3)	(4)	-	-	-	-	(8)	-	-	-
Accounts receivable	-	-	(120)	(60)	(12)	(52)	(97)	(53)	(284)	(190)	(193)	(175)
Other assets												
Accounts payable	-	34	6	5	15	9	9	17	5	14	14	28
Accrued expenses	-	4	7	8	(13)	8	9	11	(25)	62	94	32
Deferred revenue	(3)	21	(129)	(141)	(197)	25	1	30	(108)	196	177	169
Net cash provided (used) by operating activites	(3)	5	(129)	(141)	(197)	25	1	30	(108)	196	177	169
Cash flows from investing activities												
Capital expeditures	-	-	(98)	-	-	(60)	0	(0)	(0)	(133)	0	0
Net cash used in investing activities	-	-	(98)	-	-	(60)	0	(0)	(0)	(133)	0	0
Cash flows from financing activities												
Net borrowings (payments) under line of credit agreements	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds from issuance of stock	-	110	500	-	500	-	-	-	-	-	-	-
Net borrowings (payments) of long term debt	-	-	78	(7)	(7)	40	(11)	(11)	(11)	93	(20)	(20)
Net cash provided by (used in) financing activities	-	110	578	(7)	493	40	(11)	(11)	(11)	93	(20)	(20)
Net increase (decrease) in cash	(3)	115	351	(148)	296	5	(10)	19	(119)	156	157	149
Cash at beginning of period	6	3	118	469	321	617	622	612	631	512	668	826
Cash at end of period	$ 3	$ 118	$ 469	$ 321	$ 617	$ 622	$ 612	$ 631	$ 512	$ 668	$ 826	$ 975

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