

2017 Strategic Plan

Maine Technology Institute



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Project Tipping Point
2017 Strategic Plan

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A Letter to the Friends of Maine Technology Institute

Dear Friends:

The Maine Technology Institute is delighted to present its 2017 Strategic Plan. The Strategic Plan is the culmination of 15 months of thorough and careful review and analysis that gauged MTI's accomplishments to date, sought feedback from stakeholders within the innovation economy, incorporated lessons learned from its 16 years of project funding and investments, and identifies MTI's strategic priorities for the next several years.

Mainers have always been inventive, clever, resourceful, and creative. We even have a name for it: Yankee ingenuity. Without question, Maine workers and entrepreneurs enjoy a well-earned reputation for originality, and possess an unrivaled and legendary work-ethic. Since 1999, MTI has funded innovations developed by Maine inventors in garages all the way up to large public companies, world renowned research organizations, and academic institutions. We have funded diverse projects leading to innovations in gene sequencing and ocean microbial systems, guitar and surf board manufacturing, vodka from Maine potatoes, algae cultivation and eel aquaculture, to name but a few.

MTI's programs help innovators accelerate progress to the market, help leverage additional private and public investment, help create quality jobs in Maine, and ultimately, have a positive economic impact across all of Maine. MTI has provided careful stewardship and investment of over \$200 million in public funds across more than 2,000 projects throughout Maine that helped leverage over \$900 million in private sector co-investment.

This new Strategic Plan replaces the last strategic plan which was issued in 2010. The new Strategic Plan will build upon its legacy and will emphasize investments in innovations, will utilize a comprehensive strategy for portfolio investments that highlights three main funding "buckets," will focus on investments in the later stage of the innovation continuum, will increase attention to geographic distribution, will clarify MTI's commitment as a leader in Maine's innovation economy, and will collect and report data on the organization's performance and impact.

As we move from planning to implementation, MTI will convene a committee to continually monitor the Strategic Plan's progress to ensure a successful operationalization of the Plan. The committee will also ensure an outreach and marketing plan for communicating and amplifying MTI's profile and effectiveness is designed. And, finally, the committee and staff, with Board input, will continuously review and, when necessary, modify the plan's deliverables based on lessons learned, organizational capacities, budget realities, and changes in Maine's policy and economic environment.

We want to thank the Strategic Planning Committee members and all in the innovation ecosystem and state government that helped us to create the Strategic Plan and to chart the course forward for MTI.



Alexander "Sandy" Spaulding
MTI Board Chair

Sincerely,



Brian Whitney
MTI President

Executive Summary

The Maine Technology Institute (MTI) is an industry-led, publicly funded, nonprofit corporation offering early stage capital and commercialization assistance that creates new products, processes, and services, leading to the creation and retention of quality jobs in Maine. Since 1999, MTI and its partners across the State have been critical to the State's economic development strategy and a significant driver in the long-term expansion of research and development assets resulting in the creation of new ventures.

In 2016, MTI embarked on a 15-month process to develop a new strategic plan to replace the Strategic Plan issued in 2010: seeking to clarify MTI's purpose, provide guidance for the board and staff, provide a framework for deciding new opportunities, and clarifying roles for implementation. The Strategic Planning Committee (SPC) reviewed internal data, engaged more than 120 stakeholders in its discovery process, and analyzed the collected information. The process resulted in three Strategic Goal Areas, and the completion of a Strategy for Portfolio Investments.



OUR MISSION:

The Maine Technology Institute's core mission is to diversify and grow Maine's economy by encouraging, promoting, stimulating, and supporting innovation and its transformation into new products, services and companies, leading to the creation and retention of quality jobs in Maine.

Strategic Goal #1: MTI will invest for impact by using the Strategy for Portfolio Investments.

5 Key Components of the Strategy

- Overall guidance for the Strategy of Portfolio Investments.
- The stated relevance of the seven targeted technology sectors to the portfolio.
- The strategy for risk tolerance, including assessing risk.
- The strategy for diversifying MTI revenue sources.
- Aligning MTI's resources to the strategy.

Strategic Goal #2: MTI will measure and monitor impact to influence decision making and direction setting, and communicate results.

- Measure the Impact of MTI Investments
- Monitor the Health of the Innovation Ecosystem
- Measure the Performance of MTI

Strategic Goal #3: MTI will continue to be a leader in Maine's Innovation Economy and build a complementary system of supports.

About Maine Technology Institute

Mission/Purpose

The Maine Technology Institute's core mission is to diversify and grow Maine's economy by encouraging, promoting, stimulating, and supporting innovation and its transformation into new products, services and companies, leading to the creation and retention of quality jobs in Maine.

Statute and History

The Maine Technology Institute (MTI) is an industry-led, State-funded, nonprofit corporation that offers early-stage capital and commercialization assistance in the form of competitive grants, loans, and equity investments, as well as entrepreneurial guidance and mentorship, to support the research, development, and application of technologies that create new products, processes, and services, generating high-quality jobs across Maine. Additionally, MTI is asked on occasion to administer a variety of research and development-focused bonds and other initiatives on behalf of the State to stimulate private and public sector investments in research and development infrastructure, equipment, facilities construction and renovation, and to help advance emerging technologies and innovation throughout Maine.

In 1997, by Joint Order (SP669), the 118th Legislature created the Joint Select Committee on Research and Development to review current policies and programs within the State in support of applied research and development. That committee, followed by the comprehensive work of 119th Legislature's Joint Select Committee on Research and Development, created the framework for Maine's research and development programs and designated that those initiatives ought to focus Maine's investments on seven Targeted Technology Sectors - - biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, information technology, and precision manufacturing technology.

In 1999, the Legislature also created the Maine Technology Institute (MTI) to help encourage, promote, stimulate and support research and development activity in the State of Maine.

In 2001, an analysis conducted by the Maine State Planning Office (SPO) found that Maine ranked 37th in the nation in per capita income. In an effort to raise Maine incomes, SPO director Evan Richert developed his *30 and 1000 plan* which drew a clear correlation between higher education, investment in research and development (R&D), and Maine's income levels. The plan was a call for action to increase the percentage of Maine's adults with four-year college degrees to 30% and increase the amount of R&D spending (by all parties and from all sources) to \$1,000 per employed worker in the State. The report, once again, recognized the need for a long-term commitment to fund the commercialization by industry of new technologies, products and services by increasing funding to the Maine Technology Institute to propel Maine forward into the knowledge economy.

Since that time, MTI, working with partners across the State, has focused its efforts on helping to diversify and grow Maine's economy by encouraging, promoting, stimulating and supporting innovation and its transformation into new products, services and companies, leading to the



Masters Student Kate Stephens on Mark V Testing Hull

creation and retention of quality jobs in Maine. MTI is critical to the State’s economic development strategy and a significant driver in the long-term expansion of research and development assets resulting in the creation of new ventures.

Today, MTI administers a variety of financial and assistance programs that help Maine companies develop technologies into market-ready products and services, improve production processes, and access the capital that they need to grow. MTI remains the State’s only source of private-sector-focused, R&D financing leading to new products and services, job creation and other economic benefits. Its efforts have been guided by the State’s five-year innovation action plans, and its performance has been evaluated annually or bi-annually by an independent evaluation commissioned by the Maine Department of Economic and Community Development.

Audiences

The Maine Technology Institute serves distinct, yet interrelated, audiences that impact and benefit from Maine’s innovation ecosystem. MTI’s public charter instructs MTI to cooperate with a variety of partners, including the Maine Department of Economic & Community Development, Maine Manufacturers Extension Partnership, the University of Maine, and others ensuring a complementary system of supports. Today, our work serves:

- Innovators, inventors, entrepreneurs, companies of all sizes and maturity, and others who are seeking inspiration and support to create new business ideas.
- Researchers and developers who transform, test, and build ideas into new products, services, or processes.
- The innovation ecosystem that shares knowledge and skills; as well as creates and supports the infrastructure and industry connections vital for cluster growth.
- The Maine taxpayers, and their representatives in the Maine Legislature, who fund and support the activities to grow and diversify Maine’s economy.

The Planning Process

Strategic Planning Committee

We would like to acknowledge and thank the members of the MTI Strategic Planning Committee (SPC) who dedicated significant time into the strategic thinking, generative conversations, and activities that ultimately led to the Strategic Plan.

Committee Membership

Jake Ward	Committee Chair and Member of MTI Board of Directors
Sandy Spaulding	Chair of MTI Board of Directors
Stephen Smith	Member of MTI Board of Directors
Donna Cassese	Member of MTI Board of Directors
Sebastian Belle	Member of MTI Board of Directors
Brian Whitney	President of MTI and Member of MTI Board of Directors
Emily Ernst Cordray	Director of Finance and Administration at MTI
Joseph Migliaccio	Director of Business Development at MTI
Martha Bentley	Director of Innovation Infrastructure at MTI
Shanna Cox	Principal Consultant, Project Tipping Point

Process Overview

Goals of the Planning Process

The Strategic Planning Committee convened for 15 months, beginning in March 2016. The committee aimed to further develop mutual trust and commitment to MTI's mission among staff, board members and the innovation ecosystem, while creating a plan that:

- replaces MTI's prior Strategic Plan, dated January 11, 2010,
- clarifies MTI's purpose,
- provides guidance for the board and staff in determining priorities for MTI's goals and programs,
- provides a framework for deciding upon new opportunities, and
- clarifies the roles of customer, staff, board, and innovation ecosystem in implementation.

Discovery

The committee commenced an inclusive discovery process that sought input from a large and diverse set of MTI stakeholders. With support from a consultant, the committee identified 13 stakeholder groups (below) to engage through one of three methods- joining an existing group for input, hosting key informant interviews, or convening focus groups. The consultant utilized questions formulated to increase the committee's understanding of the stakeholder, the stakeholder's knowledge of MTI, strengths and gaps in the innovation ecosystem, and the resources stakeholders need to be successful growing Maine's economy and creating jobs.



Summary of Themes from Discovery

The committee reviewed findings from within each stakeholder group, and themes carried across stakeholder groups. While all feedback was given equal consideration during multiple analysis sessions, clear themes emerged for the committee to address during planning.

- **Mission and Purpose of MTI** - Feedback revealed agreement regarding MTI's primary role as a funder and widespread belief that MTI's primary function is to create jobs and grow the economy in Maine. Those interviewed desired to see clarity about the emphasis placed on research, development, commercialization, innovation and entrepreneurship, and MTI's public presence. A desire to understand how MTI defines "technology" and what role, if any, MTI has as a service provider was also voiced.
- **Entrepreneur and Technology Network**- Widespread agreement exists that duplication in the network is a false perception, and the appearance of duplication is most seen by those unfamiliar with the network and is a result of tailored services and programs. Limited access to capital, expertise, and talent are gaps in the network were noted by the majority of those interviewed. Feedback also displayed a desire for MTI to consider their role as a network navigator- increasing linkages in the innovation ecosystem and increasing understanding of funding sources and services.
- **Measuring Success**- All stakeholders noted the importance of measuring success and the dual need and challenge of measuring impact. Widespread agreement of the core metrics to measure included jobs created and retained, quality of jobs created and maintained, funds awarded and leveraged, and revenue from portfolio companies. Additionally, stakeholders desire to see the geographic distribution of MTI's success and impact, as well as see metrics for degree attainment and business starts.
- **Process, Systems and Decision Making Structures**- Consistent feedback noted a desire to streamline systems to reflect the often-rapid pace of development and needs of companies, seeking a balance of fiduciary oversight of taxpayer funds and being responsive to a fast-paced private sector.
- **Portfolio Management Strategy**- The majority of feedback indicated a desire to clarify the strategy by which MTI manages its portfolio of investments. Areas to address included risk tolerance, funding on the idea-to-commercialization continuum, the role of the seven sectors in today's economy, and the transfer of companies and innovations into Maine from outside our borders.

Analysis

The Strategic Planning Committee undertook analysis in stages, first reviewing internal data regarding programs and the investment portfolio, then reviewing internal and external discovery findings. The review of data and discovery findings identified key strategic questions to guide the committee's analysis. The committee reviewed the strategic questions with MTI's Board of Directors who identified multiple checkpoints for reviewing the committee's work and proposals. The analysis that occurred throughout this process resulted in the strategic plan and its key components.

Strategic Planning Questions

1. How will we define and use key terms vital to our planning (“the continuum,” entrepreneur, technology, cluster, innovation)?
2. What is MTI’s core purpose? What are its core programs and activities, and to whom are they provided?
3. Given the identified needs of communication, coordination, navigation, and convening, what role will MTI play in the economic development network (ecosystem), if any? How could that role serve MTI’s purpose?
4. What portfolio strategy will MTI use to achieve its core purpose? Are there programmatic changes that need to occur to support MTI’s purpose and portfolio strategy?
5. How will MTI’s tolerance for risk, our emerging learning on sector development and the seven-sector’s current relevance, our thinking regarding MTI’s Return on Investment and revenue diversification, our current and projected human and financial resources, and our definition of “technology” inform our strategy?
6. How will we make provisions for communication within our strategic plan, and how will we communicate the strategic plan process, findings and results?

Key Definitions

The Innovation Continuum- For the utility of planning and in the context of MTI’s purpose, the committee determined the innovation continuum as the activities that occur to move an idea or innovation from early stage to end stage. We recognize that often “the continuum” is cyclical-reaching an end stage results in a new start at the early stage. For our purposes, we are defining The Continuum as:

Idea-> Research-> Development-> Commercialization-> Sustainability

The committee recognizes “the innovation continuum” can be used to indicate varying levels of funding needed to commercialize and sustain innovations- new ideas, devices or methods. The committee also recognizes “the continuum” can reference the ways that MTI supports projects or companies toward commercialization- “encourage, promote, stimulate and support.”

Innovator(s) - *Individuals or groups who introduce ideas that create something new, or improve something existing.*

Innovation- *New ideas, devices, or methods with the potential to grow and diversify Maine’s economy and increase the number of quality jobs in Maine.*

Entrepreneur(s) - *Individuals or groups who take high risk ideas and move them to financial and social return.*

A note on the evolving definition of Entrepreneur- Early MTI (1999) seldom referenced “entrepreneurs,” instead focusing on investing in “technology projects” and “innovation.” Society has increased the use of “entrepreneur,” often associating the term with individuals starting out and who are likely looking for an exit. The use of the term, going forward, should be intentional and should recognize that the evolved definition can exclude “serial entrepreneurs,” lifestyle companies, and those not looking for an exit. The group found the word “Innovator” to

be more inclusive, and indicate individuals or groups from any size and stage company with a new idea, device or method that has potential.

Cluster—A geographic concentration of related companies, organizations, and institutions with certain things in common- most notably supply chains, markets and/or knowledge or talent expertise that can be present in a region, state or nation. Clusters arise because they raise productivity- which is influenced by local assets and the presence of similar firms, supporting institutions and infrastructure. The relationships within the cluster- sharing knowledge, skills and activities is what differentiates clusters from industry concentrations.

Innovation systems- Systems based on elements including academic, public sector and business R&D and innovation activities with effective commercialization, and all supported by flexible public policy mechanisms.

Innovation ecosystems- The elements added to innovation systems to create a culture of innovation based on interaction, and openness to opportunities and change. An effective innovation ecosystem enables entrepreneurs, companies, universities, research organizations, investors and government agencies to interact effectively to maximize the economic impact and potential of their research and innovation.

- An ecosystem is dynamic and flexible, allowing new entrants to become part of the ecosystem with minimal entry barriers while allowing parts of the ecosystem to fade and leave active involvement.
- An ecosystem is an open system with no defined jurisdictional boundaries or geographies.
- An ecosystem is concerned with the range and quality of interactions within and between the structures in the ecosystem, and does not focus on the structures specifically.

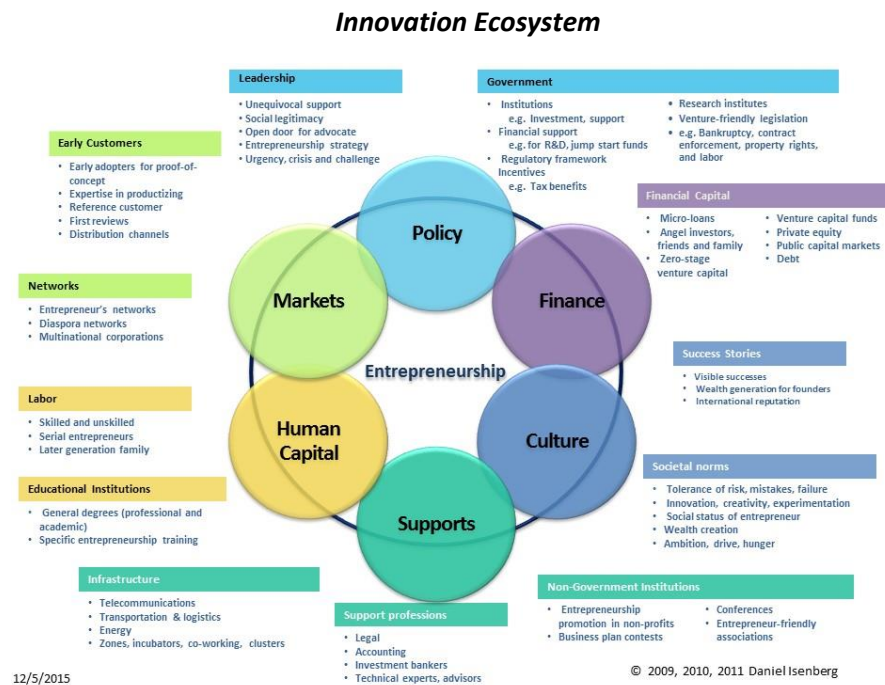


Figure 1 Innovation Ecosystem, image courtesy of Babson College, Daniel Isenberg

Strategic Goal #1

MTI will invest for impact by using the Strategy for Portfolio Investments.

Context of the Strategy

MTI's portfolio is comprised of past financial investments under active management, past financial investments monitored for potential repayment, and current financial investments. The strategy is intended for the entirety of MTI's portfolio of financial investments, and to guide future decisions for investments. The strategy is a framework of investments accelerating **innovations**- the new ideas, devices or methods with potential to grow and diversify Maine's economy and increase the number of quality jobs throughout Maine. MTI invests in innovations that move along the **innovation continuum**- the path an innovation follows from idea to research to development to commercialization to sustainability. The innovations can flow to MTI from companies, organizations, cohorts of companies and cluster of any maturity level, business model, or geography. Additionally, innovations can enter and exit the continuum at multiple points, with investments tailored to the opportunity and in keeping with the strategy.

Focus of the Strategy

The Strategy for Portfolio Investments places emphasis on investing for impact on quality job creation and retention, the growth and diversification of Maine's economy, capital raised and/or funds leveraged, and financial returns to MTI.

Components of the Strategy

The Strategy has five key components to guide the Board of Directors and staff of MTI for investing human and financial resources when forming annual budgets, setting award program targets and making routine decisions. These components address:

- Overall guidance for the Strategy of Portfolio Investments.
- The stated relevance of the seven targeted technology sectors to the portfolio.
- The strategy for risk tolerance, including assessing risk.
- The strategy for diversifying MTI revenue sources.
- Aligning MTI's resources to the strategy.

The complete Strategy for Portfolio Investments can be found in Appendix B.

Strategic Goal #2

MTI will measure and monitor impact to influence decision making and direction setting, and communicate results.

MTI has always valued metrics as an indicator of success. Since MTI's establishment 17 years ago, the changing landscape of the innovation economy, Maine's economy, and the sometimes-limited access to relevant information have required changes in approach to monitoring metrics for success. Advancements in the fields of impact and network evaluation have also evolved and introduced new metrics available to the staff and board of MTI. To achieve MTI's strategic goal of investing for impact, it is important that MTI adapt or create systems to measure and monitor success. This includes but does not limit using systems to:

Strategic Goal #2 continued

Measure the Impact of MTI Investments

MTI will evaluate and measure the impact of its investments, and communicate annually in a minimum of four key areas:

- Jobs created and retained, specifically
 - Quantity of jobs created and/or retained,
 - Analysis of wages and benefits, and
 - geographic distribution of jobs created or retained.
- Overall health of companies and teams awarded
- Geographic distribution of awards
- Capital raised and/or funds leveraged

Monitor the Health of the Innovation Ecosystem

MTI will use respected and available sources to monitor the health of the innovation ecosystem, including:

- Degree attainment trends by county (*Measures of Growth*, MDF)
- Number of business starts throughout Maine (*Measures of Growth*, MDF)
- Growth of clusters of innovation, infrastructure and support (Maine Department of Labor's Location Quotient Data)

Measure the Performance of MTI

MTI will use annual reporting from award recipients and internal data to measure and communicate:

- The number of awards and amount of dollars invested through MTI programs
- The maturity and health of companies receiving awards, where applicable
- Allocation of awards into three areas:
 - Early Stage (Ideas and Research),
 - Late Stage (Development, Commercialization and Sustainability)
 - Maine's Systems of Support for Innovation (Physical Infrastructure, Human Capital and Entrepreneurial Support and Culture)
- Customer feedback regarding access to funding requests and award process



Strategic Goal #3

MTI will continue to be a leader in Maine's Innovation Economy and build a complementary system of supports.

MTI has always sought to strengthen public-private partnerships, and placed both financial and human resources into efforts that contribute to the innovation economy and strengthen connections in the innovation ecosystem of complementary supports. MTI will proactively engage the innovation ecosystem, continue to take a big picture view of Maine's economy, and be a leader:

- Through engaging, convening and supporting public-private partnerships,
- By identifying gaps in the innovation ecosystem, and
- Shaping innovation ecosystem alignment.



Implementation and Oversight

Aligning MTI's Resources to the Strategy

This Strategic Planning Committee acknowledges that MTI has financial and human resources to invest into the strategic goal areas. Ultimately, MTI staff will be responsible for operationalizing the Strategic Plan, and MTI board and staff will ensure that human resources and proposed budgets align with MTI's portfolio strategy. Additionally, MTI will provide ongoing assessments of its investments and will identify opportunities to provide needed support and assistance by proactively engaging and partnering with existing innovation ecosystem partners as well as providing in-house support.

Roles:

There are many stakeholders who will have a role in achieving the goals set forth in this plan- true success will depend on private enterprises, education institutions, and innovation ecosystem partners as well as the staff and board of MTI. The staff of MTI are charged with determining the best approaches to implementing and operationalizing the plan; working with the board and its committees to realize the goals. The SPC has identified a number of key roles that set forth a foundation for implementation and operationalization from which to build.

Staff:

- MTI's risk tolerance for financial investment is greater for smaller investments and, correspondingly, is lower as investment amounts increase. Staff will develop a project evaluation and risk assessment plan that ensures that further scrutiny around economic impact,

repayment potential, quality job creation and retention, and company or institution growth will be applied as individual funding requests generally exceed \$250,000, and/or accumulated committed, completed, and potential MTI awards generally exceed \$350,000, over three years.

- MTI staff, working in concert with internal and external expertise, will provide ongoing assessments of its investments and will identify opportunities to provide needed support and assistance by partnering with existing innovation ecosystem partners as well as providing in-house support.
- MTI staff will continuously look for opportunities to propose and implement programs to support and encourage companies and innovations in the seven Targeted Technology sectors, through a comprehensive approach to investing within and across the seven sectors. MTI acknowledges that the greatest innovations can, and often do, occur at the intersection of two or more sectors.
- All members of MTI's staff are expected to play a vital and proactive role in amplifying MTI's profile throughout Maine to support innovation and to ensure a robust pipeline of investment opportunities (awards).
- MTI invests using a tailored approach that reflects the diversity and breadth of the innovation ecosystem and companies' stages of maturity, differences in financing and business models, and geographically specific needs. MTI staff is empowered to propose new and improved approaches to achieve this goal.
- MTI staff will strive for efficient, flexible, and transparent application and allocation processes.
- MTI staff will work with its partners within Maine's innovation ecosystem to develop strategies for encouraging out-of-state companies and entrepreneurs to bring innovation, knowledge, and talent to the state of Maine.

Board

- MTI's risk tolerance for financial investment is greater for smaller investments and, correspondingly, is lower as investment amounts increase. Further scrutiny around economic impact, repayment potential, quality job creation and retention, and company or institution growth will be applied as individual funding requests generally exceed \$250,000, and/or accumulated committed, completed and potential MTI awards generally exceed \$350,000, over three years.
- MTI will continue to diversify sources of funds to ensure its ability to meet its mission. MTI's board will consider modifying its existing funding programs to allow for repayments from a variety of funding instruments including royalties, equity and loans, as well as interest from non-bond cash holdings; MTI will also remain open to new mechanisms in the future. MTI's board will also allocate funding, or request new funding, to offset the administrative costs associated with implementing and managing legislatively mandated programs or voter-approved bond initiatives.
- MTI's board annually reviews available and allocated funds, and determines the targets for the three investment areas for the following fiscal year.
 - The Early stages of the innovation continuum (ideas and research),
 - The Later stages of the innovation continuum (development, commercialization and sustainability), and
 - Maine's system of support for innovation – physical infrastructure, human capital and entrepreneurial support and culture.
- MTI's board will also annually budget funds for special opportunities that fit into MTI's mission, but do not fit into the three investment areas, above.

- MTI's Board will continually evaluate opportunities to delegate decision making to the MTI Staff in order to focus the Board's resources on strategic planning and decision making.

Targeted Technology Sector Boards

- MTI's Targeted Technology Sector Boards will continue to provide thoughtful reviewer input on selected MTI grant and loan applications to ensure that the organization exercises rigorous due diligence in its funding decisions.
- Targeted Technology Sector Board members will serve as MTI ambassadors to help the organization attract top caliber proposals and to broaden its impact across the state of Maine.
- Each of the seven Targeted Technology Sector Boards is empowered to establish goals and objectives for its respective technology sector and to establish research and development priorities and strategic needs.

Appendix A- An overview of changes

Investing in innovation. MTI is clearly differentiating company lifecycles from the innovation continuum- and is focused on investing in innovations (new ideas, devices or methods that grow and diversify the economy).

Investing for impact using a whole-portfolio strategy. MTI will be setting annual targets for investing into three “buckets”- the early stage of the innovation continuum, the late stage, and systems of support for innovation (physical infrastructure, human capital and entrepreneurial supports and culture), and emphasizes investment into the late stage (development and commercialization).

Increased attention to geographic distribution of investments. MTI will be factoring in the needs of geographic areas in Maine, and MTI’s overall geographic distribution of investments into decision making and proactive engagement efforts.

Tailored approach to investments. MTI will tailor its programs and processes to reflect the diversity and breadth of the ecosystem, companies’ stages of maturity, differences in financing and business models, and geographically specific needs.

Investing across the seven sectors. MTI will invest within and across the sectors, recognizing the greatest innovations occur at the intersection of two or more sectors.

Clarified tolerance for risk. MTI will have an increased tolerance for risk with investments under \$250,000, and if significant job creation opportunities exist.

Diversified revenue sources. MTI will consider repayments for a variety of funding instruments, including royalties, equity, and loans; reflecting a tailored approach to investments.

Specified collection of data and its use in decision making. MTI will align its data collection tools and systems to the Strategic Plan, with clear attention to impact of MTI investments, the health of the innovation ecosystem, and MTI’s performance.

Clarified commitment to the innovation ecosystem. MTI will be a leader in the innovation economy, and build a complementary system of supports. MTI will assess its portfolio for interaction with ecosystem partners, and will use a holistic approach to shaping ecosystem alignment.

Designated funds for special opportunities. MTI will designate funds annually for special opportunities, and apply the strategy for portfolio investments to special opportunities.

Proactive engagement and outreach. MTI will increase emphasis on proactively engaging its audiences and ecosystem partners; to inform entrepreneurs and innovators, communicate successes and impact, and increase its reach throughout Maine.

Encouraging transfer of innovation, knowledge and talent to Maine. MTI encourages out-of-state companies and entrepreneurs to bring innovation, knowledge and talent to the state of Maine.

Appendix B- Strategy for Portfolio Investments

MTI's Strategy for Portfolio Investments:

MTI's Mission

MTI's core mission is to diversify and grow Maine's economy by encouraging, promoting, stimulating and supporting innovation and its transformation into new products, services and companies, leading to the creation and retention of quality jobs in Maine.

MTI Invests for Impact

MTI seeks results and impact that focus on quality job creation and retention throughout Maine, the growth and diversification of Maine's economy, and leveraged funds and financial returns to MTI and Maine. MTI will invest in a manner that addresses and recognizes the unique needs of entrepreneurs and innovators and provides funding and assistance to support them as they develop products, improve processes, attract talent, and grow enterprises in Maine.

MTI will Annually Budget Funds for Special Opportunities

MTI is often called upon to respond to critical or emerging needs, support unique initiatives and invest in projects that will benefit industries or the State that fit into MTI's mission and do not fit into existing programs. To include these opportunities in the budget and decision making processes the board will annually budget funds for special opportunities, creating the flexibility for MTI to respond to emerging and critical needs on a responsive time frame.

Guidance for Strategy for Portfolio Investments

- MTI achieves its mission by investing its financial and human resources in individuals, companies, organizations and clusters within:
 - The Early stages of the innovation continuum (ideas and research),
 - The Later stages of the innovation continuum (development, commercialization and sustainability), and
 - Maine's system of support for innovation – physical infrastructure, human capital and entrepreneurial support and culture.
- MTI's board annually reviews available and allocated funds, and budgets target ratios for the three investment areas for the following fiscal year.
- MTI's board will also annually budget funds for special opportunities that fit into MTI's mission, but do not fit into the three investment areas, above.
- MTI invests into the continuum utilizing a pipeline approach designed to move innovations through the continuum and with multiple entry points; with programs investing into all of the stages of the innovation continuum.
- MTI emphasizes investments into later stages of the continuum to achieve greater impact, foster quality job creation and retention throughout Maine; and to address current gaps in the innovation ecosystem.

- MTI invests using a tailored approach that reflects the diversity and breadth of the innovation ecosystem and companies' stages of maturity, differences in financing and business models, and geographically-specific needs.
- MTI will strive for efficient, flexible, and transparent application and allocation processes.
- MTI encourages out-of-state companies and entrepreneurs to bring innovation, knowledge, and talent to the state of Maine.
- MTI encourages investments that utilize and maximize existing innovation ecosystem resources.

Relevance of the Seven Targeted Technology Sectors to the Portfolio

MTI will continue to support and encourage companies and innovations in the seven Targeted Technology sectors, through a comprehensive approach to investing within and across the seven sectors. MTI acknowledges that the greatest innovations can, and often do, occur at the intersection of two or more sectors.

Strategy for Risk Tolerance

- MTI's risk tolerance for financial investment is greater for smaller investments and, correspondingly, is lower as investment amounts increase. Further scrutiny around economic impact, repayment potential, quality job creation and retention, and company growth will be applied as individual funding requests generally exceed \$250,000, and/or accumulated committed, completed and potential MTI awards generally exceed \$350,000, over three years.¹
- MTI is intended to take risks, but must balance risk taking with appropriate due diligence, its accountability and fiduciary responsibility to public policy makers and Maine taxpayers.
- MTI is more tolerant of risk if the opportunity for significant job creation exists.
- MTI will manage risk with standardized criteria and risk assessment tools that assess the:
 - likeliness of job creation and retention,
 - likeliness of success of the innovation,
 - likeliness of success of the business,
 - likeliness of a return of capital to MTI,
 - timeline of success, and
 - capacity at MTI to tailor funding, support and services to applicant.

Strategy for Diversifying Revenue

MTI will continue to diversify sources of funds to ensure its ability to meet its mission. MTI will consider modifying its existing funding programs to allow for repayments from a variety of funding instruments including royalties, equity and loans, as well as interest from cash; MTI will also remain open to new mechanisms in the future. MTI will also allocate funding, or request new funding, to offset the administrative costs associated with implementing and managing legislatively mandated programs or voter-approved bond initiatives.

Aligning MTI's Resources to the Strategy

MTI will provide ongoing assessments of its investments and will identify opportunities to provide needed support and assistance by partnering with existing innovation ecosystem partners as well as providing in-house support.

¹ Risk strategy thresholds were chosen by the committee using MTI award data from fiscal years 2014-2016. The data is available in Table 1, Appendix F.

Appendix C- Evaluation Matrix

Metric or Data Type	Frequency of Metric	What does it tell us?	Source	Updated
Measuring the Impact of MTI Investments				
Jobs created and/or retained	yearly - survey	impact on State economy	Proposed Survey of Award Recipients	yearly
Awardee revenue trends	yearly - survey	impact on State economy	Proposed Survey of Award Recipients	yearly
Geographic distribution of awards	continuous - on application	impact to areas of State/ measure of MTI's reach	GIFTS - MTI Internal Award Database	continuous
Capital raised and/or funds leveraged	yearly - internal calculation	supplement to taxpayer funds	GIFTS - MTI Internal Award Database	yearly
Monitor the Health of the Innovation Ecosystem				
Degree attainment trends by county	yearly	impact of ecosystem support on worker quality	<i>Measures of Growth</i> - MDF	yearly
Number of business starts throughout Maine	yearly	trends in overall State business health	<i>Measures of Growth</i> - MDF	yearly
Growth of clusters of innovation, infrastructure and support	yearly	trends in support available	Maine Department of Labor - Location Quotient Data	yearly

Measuring the Performance of MTI

Number of awards and amount of dollars invested through MTI programs	yearly	progress towards yearly investment goals per strategic plan	GIFTS - MTI Internal Award Database	continuous
Maturity and health of companies receiving awards, where applicable	continuous - on application	progress towards yearly investment goals per strategic plan	VIRAL scale or like	continuous
Allocation of awards into identified target areas (early stage, late stage, ecosystem support)	continuous - on application	progress towards yearly investment goals per strategic plan	VIRAL scale or like	continuous
Customer satisfaction feedback	yearly	impact on State economy; organizational performance	Proposed Survey of all applicants	yearly

Additional Data Tracked by MTI for Internal Evaluation Purposes

Funding received/ amount deployed by year and overall	yearly - internal calculations	full use of taxpayer funds	Internal Financials/BOD Packet	yearly
Funding by technology sector	continuous - on application	tech sector coverage	GIFTS - MTI Internal Award Database	continuous
Development Loan stage of completion (commercialized, repaying, out of business)	continuous - updated when new info is available	success of portfolio companies	DA Tracking Database	monthly
Repayments received	monthly - results driven	companies commercialized; dollars available to recirculate	Award Repayments Report	monthly
Net financial operating results	monthly - results driven	can MTI sustain programming under current legislative constraints?	Audited Financial Statements	monthly

Additional Data Tracked by MTI for Internal Evaluation Purposes- continued

Deferred Revenue tracking year-to-year	yearly	MTI pool of funds available	Deferred Revenue Summary	yearly
Number of applications/year & in total	continuous	trends in application	Award Status Report	monthly
SBIR application results	quarterly	impact on State economy through business growth and Federal funding	SBIR Tracking Workbook	quarterly
R&D activity as a percentage of Gross State Product	yearly, with a two-year delay	indicates potential commercialization growth	<i>Measures of Growth</i> - MDF	yearly

Appendix D- Stakeholders Providing Input in Planning Process

Commissioners and Legislators

Commissioner Jeanne Paquette
Commissioner Walter E. Whitcomb
Commissioner Patrick Keliher
Senator Amy Volk

Department of Labor
Department of Agriculture, Conservation & Forestry
Department of Marine Resources
Joint Standing Committee on Labor, Commerce,
Research & Economic Development

Private Companies and Non-Profits

David Packhem
Tim Mateosian
Neil Spillane
Jason Cianchette
Fletcher Kittredge
Mike Dubyak
Ben Shaw
Chuck Hewett
Don Perkins
Soren Hansen

Hodgdon Defense Company
Big Room Studios
Fork Food Labs
Liquid Wireless
GWI
WEX/Focus Maine
Vets First Choice
Jackson Laboratory
GMRI
Sea and Reef

MTI Board of Directors

Sandy Spaulding, Chair
Christopher Davis, Vice Chair
Chip Kelley, Treasurer
Jake Ward, Secretary
Linda Diou
Donna Cassese
Sebastian Belle
Paul Edmonds
Joe Kumiszczka
Stephen Smith
George Gervais
Gary Crocker, then Nina Fisher

Composite Technology
Aquaculture and Marine Science
Finance, Lending, and Venture Capital
Chancellor's Designee - University of Maine System
Biotechnology
Advanced Technologies for Forestry and Agriculture
Environmental Technology
Precision Manufacturing
Information Technology
Finance, Lending, and Venture Capital
Dept. of Economic and Community Development
President's Designee - Maine Community College
System

Jonathan P. LaBonte
Brian Whitney

Director – Governor's Office of Policy and Management
Maine Technology Institute

Technology Board Members

Steve Von Vogt
Eric Kingsley
Jeff Marks
Bill Keleher
Bill Palin

Composite Board
Agriculture and Forestry Board
Environmental Board
Aquaculture and Marine Board
Biotechnology Board

Larry Langmore
Lisa Martin

Information Technology Board
Precision Manufacturing Board

Current Staff of MTI

Patti Sutter
Shane Beckim
Kim Doughty
Brian Jones
Scott Bursey
Nick Mesires
April Finkenhoefer
Lou Simms
Brian Whitney
Emily Cordray
Martha Bentley
Joe Migliaccio

Innovation Networks and Economic Development Organizations

Jess Knox
Laura Young
John Holden
Amanda Austin
Susan Ruhlman and Lee Cheever
Mike Faloon
Karin Gregory
Graham Shimmield
Nat Henshaw
John Burns
Mark Delisle
Nancy Strojny
Greg Mitchell
Peter DelGreco
Bob Clark
Alison Hagerstrom
Jim Nimon
Michael Aube
Tom Rainey
Ryan Neale

Maine Startup and Create Week
Maine Community Foundation
Lewiston Auburn Economic Growth Council
Midcoast Magnet
Maine Center for Entrepreneurial Development
Our Katahdin
Maine Innovation Economy Advisory Board
Maine Innovation Economy Advisory Board
CEI Ventures
Maine Venture Fund
Small Business Development Centers
SCORE
City of Portland
Maine & Company
Northern Maine Development Commission
Greater Franklin Development Corporation
City of Sanford
Eastern Maine Development Corporation
Maine Center for Entrepreneurial Development
Maine Development Foundation

MTI Contractors

Karen West
Joanne Goodnight
Lib Butler

C & P Management Services
Jackson Laboratory
Butler Law Offices

Entrepreneurs-in-Residence

Roger Brooks
David Stone
Carl Spang
Kerem Durdag
Jim Fecteau
John Karp
Paul Myer

Maine's Higher Education Institutions

Jay Graves	University of Maine System
Renee Kelly	
Michael Bilodeau	
John Belding	
Habib Dagher	
Ryan Low	
Derek Langhauser	Maine Community College System
Michelle Neujahr	

Current and Prior MTI Presidents and Board Members

Brian Whitney	Maine Technology Institute
Besty Biemann	CEI
Janet Yancey-Wrona	Strategic Bio Business
Robert Martin	Strategic Equity Partners LLC
Tim Agnew	Masthead Venture Partners
Evan Richert	City of Orono
James Detert	Molnlycke Health Care

Maine's Congressional Delegates

Carol Woodcock	Office of Senator Susan M. Collins
Adam Lachman	Office of Senator Angus S. King, Jr.
Chris Rector	Office of Senator Angus S. King, Jr.
Andrew Colvin	Office of Congresswoman Chellie Pingree
Samantha Warren	Office of Congressman Bruce Poliquin

Appendix E Discovery Summary of Themes

Maine Technology Institute

Summary of Internal Discovery Themes

CONTEXT

The Maine Technology Institute (MTI) convened a Strategic Planning Committee comprised of board members and staff, charged with setting a strategic course for the next several years. The Strategic Planning Committee identified key internal and external stakeholder perspectives to include in the discovery process. The committee crafted a question set to use in interviews and discussion groups that would deepen their understanding of the landscape of research, development, commercialization and entrepreneurship in Maine, and MTI's current and potential place as part of the landscape.

The following summary is the result of 21 interviews, three discussion groups, and one electronic survey, and represents input from more than 82 individuals with a unique understanding of MTI's internal workings. While the summary notes the most prevalent themes, not all comments from all stakeholders are reflected in the summaries. The seven stakeholder groups engaged in discovery included current and prior presidents, current and prior board members, current staff, technology board members, entrepreneurs-in-residence (EIRs) and current contractors.

ON MTI'S MISSION AND PURPOSE:

Participants across stakeholder group displayed a consistent understanding of MTI's purpose, as defined by statute. Throughout the sessions, participants discussed MTI's purpose using language directly from the statute, and the most used terms in defining MTI's purpose were "research," "development" and "commercialization." All stakeholder groups except the tech boards made specific reference to the statute itself, and one stakeholder group (EIR) was concerned the statute limits MTI when interpreted narrowly.

"How can MTI best help these companies succeed and become commercially profitable enterprises? How can MTI leverage the fact that it is a funder to help make this happen?"

-Prior MTI President

Areas of agreement included:

- **A desire to clarify MTI's purpose**, as it relates to the statute. Across the seven groups there was a consistent desire to clarify how the mission relates to current economic conditions, determine if the seven sectors are still relevant, and understand the connection between mission and programs.

- **The belief in MTI’s main function**, as part of the State’s economic development system. Nearly every participant referenced MTI’s key function of creating jobs and growing the economy in Maine.
- **The identification of MTI as primarily a funder.** When describing MTI’s activities or programs, everyone noted that MTI deploys funds. MTI’s programs were mentioned with varying levels of familiarity; the most noted included seed grants and tech grants.

“Programs that provide skills don’t bring people here. If we aren’t encouraging innovation we won’t have the innovators come or stay here.”

-MTI contractor

Areas of difference included:

- **The role of research, development and commercialization**, where stakeholder groups placed varying levels of emphasis on these roles in the context of MTI’s portfolio. Notably, the board referred to commercialization more than any other stakeholder group, while the tech boards referenced it rarely.
- **The topics of innovation and entrepreneurship**, which were integral to MTI’s purpose in four of the stakeholder groups, but were rarely mentioned among the board of directors, prior presidents and contractors.
- **The definition of “technology,”** as it relates to MTI’s overall purpose. Investments in “high-tech, high-growth” were often at odds with investments in small entrepreneurial efforts including technology.
- **The support to the “ecosystem,”** which surfaced consistently with varying perspectives on MTI’s role in partnering with or funding ecosystem actors, funding events and convenings and evaluating the health and ability of the ecosystem to support innovation.
- **The role of MTI as a service provider**, which was discussed with wide disparity in opinions. In discussions of MTI’s current activities, the board was the only group to not directly mention services provided outside of funding. Most stakeholder groups expressed providing services as a means to aid companies to success, often defined as commercialization. Many stakeholder groups also desired to see services provided in the context of the network, avoiding duplication.

Additional topics included:

- The impact of changing leadership and staff on MTI’s purpose.
- The lack of diversity across MTI’s tech boards, EIRs, staff and board of directors.
- The perception of State politics and its effects on MTI.

ON THE ENTREPRENEUR AND TECHNOLOGY NETWORK:

The entrepreneur and technology network is seen as uncoordinated and difficult to navigate by all stakeholder groups, especially among those who self-identified as familiar with the network. This was seen as a contributing factor to the widespread misperception of duplication within the network. When asked about duplication or overlap, the majority of individual stakeholders noted that “duplication is not bad,” “perceived duplication is actually tailored and niche services” and that MTI serves a unique purpose.

Areas of agreement included:

- **Duplication occurs most often at the local level**, where economic departments tailor programs and funding to regional and local conditions.
- **Duplicated services include business planning and mentoring**, where widespread agreement showed a lack of confidence in the consistency of these services.
- **Access to capital, expertise and talent are key gaps**, seen as limiting the success of entrepreneurs and large companies.
- **Access to funding specific to scaling** was most often noted as a gap in available funding for the idea to commercialization continuum.

Areas of difference included:

- **Potential for MTI as a network navigator** – While lack of coordination among the network impacts economic growth was noted with agreement, comments regarding MTI’s role in coordination were varied. Suggestions included MTI act as a clearing house of resources, MTI act as a point of entry, MTI maintain a website for network resource navigation, MTI convene the network to increase understanding of network actors’ roles and MTI becoming a “one stop shop.”
- **Funding the “middle growth” of the continuum**- The idea-to-commercialization continuum was consistently discussed in the majority of interviews. Noted funding gaps along the continuum were offered in a variety of terms, including “valley of death,” “middle growth,” “commercializing R&D,” “pre-revenue” and “scaling up.” Specifics to the funding gap were rare but included “\$1-2 million range” and “more than \$20 million.”

Additional topics included:

- A need to increase the interconnectedness among actors in the network, increasing understanding of roles, funding sources and services.
- A need to nurture a culture of innovation and entrepreneurship that would create more ideas and startups.

ON MEASURING SUCCESS:

All stakeholder groups noted the importance of measuring success, as well as the challenge with measuring impact. Stakeholders agreed on core metrics for measuring success, as well as broadly defining the impact of success as improving Maine’s economy and creating jobs.

The main area of agreement was:

- **The core metrics to measure**, which were stated as revenue from portfolio companies, funds awarded and leveraged, and jobs retained and created. The quality of jobs and job wages were additional metrics in more than half of the stakeholder groups.

“We need to have a deep conversation about measuring our success and metrics to use. The challenge is being able to isolate MTI’s causal relationship with impact.”

-staff member

Areas of difference included:

- **The need to clearly define success** was voiced by staff, contractor and tech board stakeholder groups.
- **The impact of measuring success**, relative to staff’s capacity to collect and analyze data, and to the companies who must comply with requests for data. Comments regarding measuring success displayed varying levels of familiarity with the time and effort of the process.

Additional topics included:

- The importance of evaluating clusters and network health relative to MTI’s mission.
- The need for internal feedback loops regarding program performance, staff’s capacity for administering programs and effectiveness of EIRs.
- The desire to align MTI’s metrics with the Maine Development Foundation’s Measures of Growth, and the State of Maine’s Science and Technology Action Plan.

ON CONSIDERATIONS FOR STRATEGIC PLANNING:

Discussions among stakeholder groups revealed consistently evident desires to streamline systems, review decision making structures and methods, and clarify MTI’s portfolio management strategy.

Areas of agreement included:

- **Review processes and systems** - In each of the interviews and discussion groups, the term “bureaucratic” was used to describe MTI’s current processes and systems. This term was applied to the current application review, contracting and portfolio management processes. The desire to streamline processes was expressed to benefit applicants and portfolio companies as well as to address limited staff capacity to manage burdensome process.

- **Review leadership and decision making structures** – Broad support was expressed for reviewing the leadership and decision making structures. Reasons included better leveraging the expertise of staff and tech boards, streamlining decision making processes, and weighing oversight against efficiency.
- **Clarify MTI’s portfolio management strategy** – The majority of interviews and all stakeholder groups expressed a desire to set and clarify the strategy by which MTI manages its complete portfolio. Noted considerations for a portfolio strategy included:
 - **MTI’s tolerance for risk**, including expected rates of failure and return on investment.
 - **MTI’s ideal client ratio**, with consideration to the proportions of MTI’s overall portfolio invested in entrepreneurs, small or “lifestyle” companies, and scaling or large companies.
 - **MTI’s funding on the idea to commercialization continuum**, as it relates to current funding gaps, the private sector’s financial products, and other public funders (Maine Venture Fund, FAME and CEI).
 - **MTI’s commitment to commercialization**, which was alternatively suggested to be R&D stage funding priorities, pre-revenue commercialization funding products or allocating funds along the pipeline for early stage applicants.

“Businesses move quickly now, and can’t wait for MTI. They need to be able to apply, get conditional approval, then match and go! What is the benefit of pooling the applicants and rating against each other?”

-Prior Board Member

Additional topics included:

- Setting goals for composition of boards, staff and contractors, looking at ethnicity, age, gender, geography, and entrepreneurial and business experience.
- Marketing programs to entrepreneurs and established companies, and outreaching to network actors across Maine’s large geography.
- Reviewing the seven sectors defined in statute for relevancy to today’s economy.
- Reviewing MTI’s definition of technology as it relates to applicant criteria.
- Communicating the strategic planning process and final plan or strategic priorities.

Maine Technology Institute

Summary of External Discovery Themes

CONTEXT

The Maine Technology Institute (MTI) convened a Strategic Planning Committee comprised of board members and staff, charged with setting a strategic course for the next several years. The committee identified key internal and external stakeholder perspectives to include in the discovery process. They crafted a question set to use in interviews and discussion groups that would deepen their understanding of the landscape of research, development, commercialization and entrepreneurship in Maine, and MTI's current and potential place as part of the landscape.

The following summary is the result of 26 interviews and three discussion groups, and represents input from more than 40 individuals with a unique understanding of MTI's external facing programs and activities. While the summary notes the most prevalent themes, not all comments from all stakeholders are reflected in the summaries. The six stakeholder groups engaged in discovery included:

- State of Maine Commissioners of the Departments of Labor and Agriculture, and the Chair of the Labor, Commerce, Research & Economic Development Committee
- Maine's Congressional Delegation,
- Economic Development Stakeholders,
- Innovation Networks,
- Maine's Higher Education, and
- Private Companies.

"I thought I was getting that alignment of local networks, UMaine, USM and regulatory capabilities. There was none of that support. I never received a resume, suggestion or offer of help. It was hard to solicit and secure help from MTI."

-CEO of MTI Success Story

ON MTI'S MISSION AND PURPOSE:

Perceptions of MTI's purpose as related to impact on Maine's economy varied by stakeholder group.

- **A desire to understand MTI's purpose** was expressed by staff of the Congressional delegation, Commissioners and Legislators. These groups had a general understanding of MTI as supporting innovation and companies, and requested more information.
- **The identification of MTI as primarily a funder** was the perception held by Private Companies and the broader Economic Development stakeholders. These groups were familiar with MTI programs and funding products, but were limited in referencing MTI's role in Maine's economy and commercialization.
- **The understanding of MTI's purpose by statute** and MTI's role in Maine's economy was displayed by the Higher Education stakeholders and the Innovation Networks. These two groups also displayed a higher awareness of MTI programs, services and products.
- **An awareness of MTI's public presence** was regularly related to funding distributions, Techwalk and Maine Startup and Create Week. Input reflected disparity of knowledge

among stakeholders regarding MTI support services, and those familiar with MTI supports reflected both positive and negative perceptions of quality of service.

Additional areas of note:

- **The role of investing in research and development** was a common theme among discussions. MTI’s investments into R&D activity were often noted across stakeholder groups. Comments from the Private Companies, Higher Education and Congressional Delegation reflected a perception that investment into UMaine Orono is preferred, also commenting that increased R&D relationships with additional institutions would benefit Maine.
- **The topics of innovation and entrepreneurship**, which were included in MTI’s purpose in all of the stakeholder groups, and mentioned as a primary activity by Private Companies, Innovation Networks, Congressional Delegation and Higher Education.
- **The focus MTI places on company size and geography** was a recurring theme among stakeholder groups. The Congressional Delegation, Economic Development Stakeholders, Commissioners & Legislators, and Higher Education all expressed a desire for MTI to consider geography when allocating resources, reporting results and having a public presence. For many, a direct correlation between geography and focus on small business was indicated.

“MTI gives grants to support innovation. I am not sure what that means. I thought it was really high tech- and not necessarily representative of the northern parts of Maine like mills and manufacturing.”

-Member of Congressional Staff

Additional topics included:

- The limited capacity of MTI to reach all areas of Maine.
- The perception of State politics and its effects on MTI.
- The perception of MTI as a government organization.

ON THE ENTREPRENEUR AND TECHNOLOGY NETWORK:

The entrepreneur and technology network is seen as uncoordinated, difficult to navigate and lacking clear entry points by all stakeholder groups, especially among those who self-identified as familiar with the network. This was seen as a contributing factor to the widespread misperception of duplication within the network. When asked about duplication or overlap, the majority of individual stakeholders noted that “duplication is needed,” “duplication is perceived as a result of tailored services and variance in geography,” and that MTI serves a unique purpose.

Prominent key themes:

- **Perception of duplication is related to familiarity with network actors;** those with high familiarity with the network saw limited and necessary duplication. Notably, Commissioners & Legislators perceived high levels of duplication while Private Companies saw no duplication across the network.
- **Negative perception of duplication in the network** was seen only by the Economic Development Stakeholders, which was the only group to name duplicative efforts. This

included duplication among funding (MVF, MTI and Maine Angels) and business support activities and funding sources (SBDC, SCORE and FAME).

- **Gaps limiting success of entrepreneurs and large companies** included access to capital, expertise and talent. Recurring specific comments suggested these gaps are most prominent for companies trying to scale past mid-growth.
- **Lack of supports for commercialization** was often noted as an area needing additional resources and focus by the economic development system as a whole. Individuals among most stakeholder groups referenced a desire to see R&D activity move to commercialization at a higher rate, and many pointed to a lack of entrepreneurs as a possible cause for concern.

Additional topics included:

- Maine’s geography as a lens for considering impact, funding allocation and network distribution.
- Maine’s lack of statewide economic development strategy as a cause for uncoordinated efforts, lack of investment into R&D and commercialization activity.
- Stakeholders’ desire to have increased communication and contract from MTI that would increase coordination and understanding throughout the network.
- Lack of workforce development as an integrated aspect of the network of supports and the idea to commercialization continuum.

ON MEASURING SUCCESS:

All stakeholder groups placed emphasis on frequently communicating success through stories. Widespread recognition was placed on the challenge of measuring impact. Stakeholders agreed on core metrics for measuring success, as well as broadly defining the impact of success as creating jobs and improving Maine’s economy.

The main areas of agreement are:

- **The core metric to measure**, stated as jobs retained and created. The quality of jobs and job wages were additional metrics in more than half of the stakeholder groups. Other metrics important to consider are funds leveraged, geographic location of jobs, degree attainment and business starts.
- **The importance of communicating results**, which was seen as lacking by all stakeholder groups. The desire exists to hear MTI’s results through case studies, stories and end stage results. This included how many jobs were created, description of products developed, and locations in Maine benefitting from MTI funding activities.

“We provide high quality jobs for Maine people, in a place where high quality jobs are in short supply. We take pride in jobs created for high school students, educational opportunities we provide, and developing Maine vendors’ products and services that will support us, but support the vendors in growth too.”

-Private Company

Additional topics included:

- A desire for personal relationship building in both seeking and communicating results and success. Specifically, Commissioners, Legislators and Congressional staff requested frequent and informal in-person communication from MTI. Economic Development stakeholders requested two referrals and a desire to understand MTI’s target grantees.
- The role of geography as a factor of success. All Private Companies, Congressional staff, Legislators and Higher Education stakeholder group members track and plan using geography as a key consideration.
- The desire to align MTI’s metrics with the Maine Development Foundation’s Measures of Growth, and the State of Maine’s Science and Technology Action Plan.

ON CONSIDERATIONS FOR STRATEGIC PLANNING:

Discussions among stakeholder groups revealed consistently evident desires to streamline systems, review decision making structures and methods, and clarify MTI’s portfolio management strategy.

Prominent key themes included:

- **Review processes and systems** - The desire to streamline processes, reduce contracting and paperwork, and decrease wait times for funding deadlines and awards was expressed by Higher Education, Congressional Delegations and Higher Education groups.
- **Increase communication and relationship building** – More frequent communication of MTI’s activities, purpose, geographic presence, and successes were clearly communicated by all stakeholder groups. Congressional Delegation, Commissioners and Legislators would like to strengthen relationships and receive personal communications. Innovation Networks would like to see increased communication from MTI in ways that would benefit network coordination.
- **Clarify MTI’s portfolio management strategy** – The majority of interviews and all stakeholder groups expressed a desire to receive increased communication about MTI’s investment strategy that will enable a deeper understanding of MTI’s purpose. Noted considerations for a portfolio strategy included:
 - **MTI’s tolerance for risk**, including expected rates of failure and return on investment.
 - **MTI’s ideal client ratio**, with consideration to the proportions of MTI’s overall portfolio invested in entrepreneurs, small or “lifestyle” companies, and scaling or large companies.
 - **MTI’s funding on the idea to commercialization continuum**, as it relates to current funding gaps, the private sector’s financial products, and other public funders (Maine Venture Fund, FAME and Maine Angels).

“It seems like there isn’t a lot of transparent accountability. I would like to see more push in the marketing. It is important to sell what the public sector does, as important as in the private sector.”

-Member of Commissioner & Legislator group

- **MTI's commitment to commercialization**, which was alternatively suggested to be R&D stage funding priorities, pre-revenue commercialization funding products or consistent supports along the pipeline for early stage applicants.

Additional topics included:

- Reviewing the seven sectors defined in statute for relevancy to today's economy.
- Reviewing MTI's definition of technology as it relates to applicant criteria and MTI's purpose.
- Review national best practices and strategies that would inform MTI's direction.
- Determine MTI's opinion of supporting the transfer of technology and businesses from outside the State of Maine.
- Consider MTI's role in cultivating and participating in public-private partnerships.
- Consider MTI's potential for relationships with R&D facilities and higher education institutions that go beyond University of Maine Orono.

Appendix F Supporting data

Setting the thresholds for further scrutiny

In developing the strategy for risk tolerance, the Strategic Planning Committee reviewed award data from fiscal years 2014-2016. The data used to inform the committee's decisions is below, in Table 1.

Table 1- Data Informing Risk Thresholds

FY14-FY16 Aggregate Awards - No Bonds			
Threshold, as a % of total cumulative \$ awarded	Cumulative \$ Awarded, at threshold	Corresponding Aggregate Award Amount	# of awards reviewed in 3 years, at or above the threshold
100%	\$ 22,399,351	\$ 1,100	237
90%	\$ 20,159,416	\$ 39,190	93
80%	\$ 17,919,481	\$ 85,000	54
70%	\$ 15,679,546	\$ 223,415	39
44%	\$ 9,828,824	\$ 350,000	16

FY14-FY16 Individual Awards - No Bonds			
Threshold, as a % of total cumulative \$ awarded	Cumulative \$ Awarded, at threshold	Corresponding Individual Award Amount	# of awards reviewed in 3 years, at or above the threshold
100%	\$ 22,399,351	\$ 470	419
90%	\$ 20,159,416	\$ 25,000	186
80%	\$ 17,919,481	\$ 25,000	96
70%	\$ 15,679,546	\$ 105,000	53
40%	\$ 8,898,217	\$ 250,000	18