

# **Guidelines to a Successful Business Case**

**EnoMAX 2019**

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### Business Case

The Business Case is one of the essential components of the EnoMAX Program. It provides you with real world application of many of the skills you will be learning and best practices you will observe throughout the program year. One of the significant values of the MAX program has been the implementation of student business cases, resulting in cost savings since MAX's implementation in 2012. Below are examples of just a few of participant's Business Cases which have been implemented.

#### Examples of Implemented Projects

##### Ambassador Program for Light Duty Employees

At the 2013 program a DART participant spoke to a staff member at LA Metro about improving elevator performance. Prior to going to the MAX program, DART was experiencing elevator issues. The only way the department would know if an elevator/ escalator was down was by customer complaints. In conversations with the staff at LA Metro, the DART participant learned that LA Metro used their light duty employees who cannot do their current job for health or other reasons to check for issues with equipment. The participant brought this idea back to DART and has since enhanced it by creating the ambassador program. The ambassador's primary job is to be visible in the stations, check for issues with equipment, and be available for customer questions and needs. He was able to implement it in just a few months. The benefits to DART are twofold. First, it gets employees who otherwise would be out of work back on the job. Second, it is improving their elevator/escalator performance and customer satisfaction. In the four years the program has been in place DART has had roughly 50 ambassadors and a drastic increase in elevator performance improvement. They have received many letters from employees who went through the program thanking them for the opportunity to learn a new skill set and to keep working through their light duty.

##### TransitWatch App for Reporting

During the 2013 program an RTD participant attended with a focus on finding out what other organizations were doing with Homeland Security's "See Something, Say Something" campaign. During the LA Metro Meet Your Match portion of the program, he learned of the app TransitWatch. RTD had been bidding out similar systems and were getting costs of \$250,000 with a \$10,000 monthly fee. He was able to work with the LA Metro IT department to get the code shared to RTD from their developer for under the \$90,000 grant amount they had to do it, essentially saving RTD all of the costs associated with starting this up. It has since been deployed system wide and used for the past four years. In this time frame, over 1000 calls have been reported, with a monthly average of 32 calls. They won the APTA award for the system and it is now being used in other transit systems across the country.

##### Customer Center Remapping

During the 2014 program a MARTA participant was able to observe and acquire best practices of all Customer Centers at the four founding agencies and adapt them to be used at MARTA. He implemented the RideStore (MARTA's Customer Center) remapping to establish a more efficient way to carry out MARTA's revenue functions including the sale of fare media, restitution research and customer service. He did this by modifying the hours of operations and by making various process changes at each RideStore. Based on the recommended changes, MARTA was able to decrease its staffing requirements by four FTEs or \$187,000; and five PTEs or \$97,000 annually. To date MARTA's total savings are \$1,136,000 and counting.

**Examples of Implemented Projects****Abridged Long Range Planning Document**

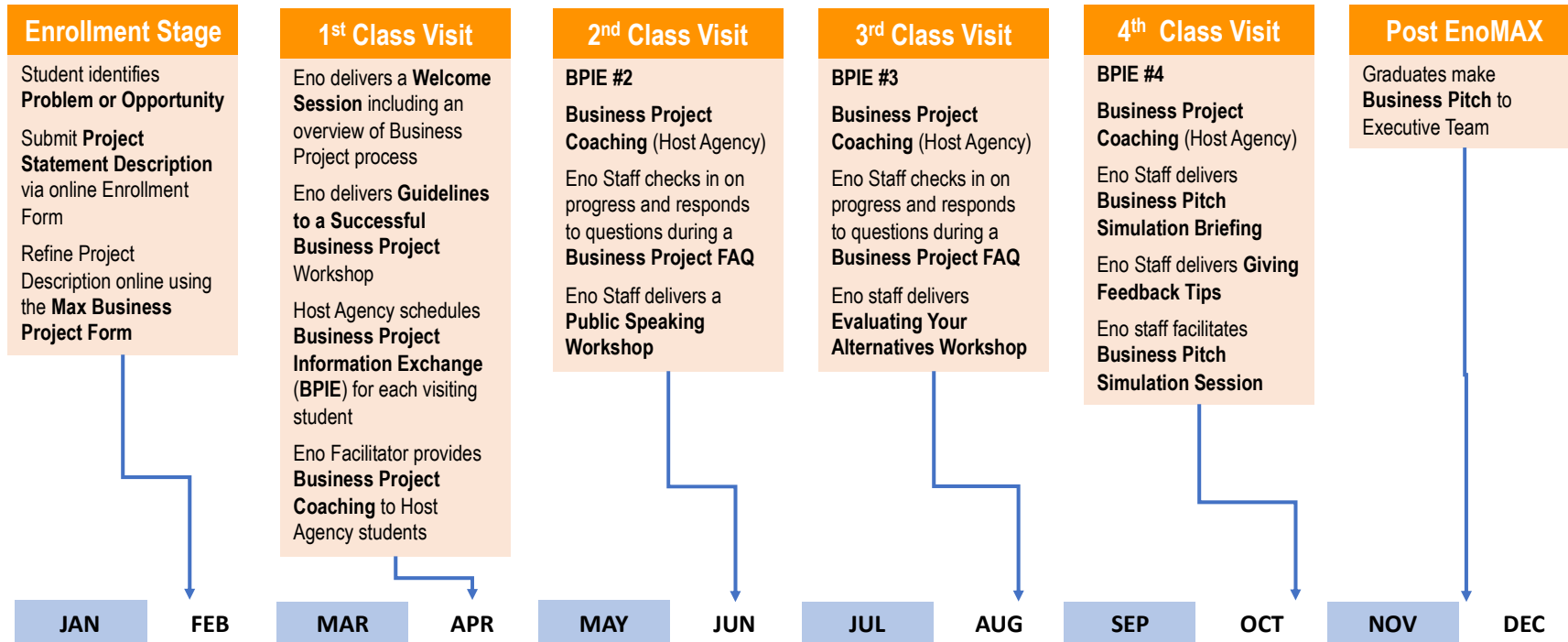
During the 2015 program a DART participant saw a presentation on LA Metro's long-range plan. These plans are very complex and often hard to understand for the public or non-technical personnel. LA Metro includes an abridged version that is full of graphical presentations and easily understandable commentary. This abridged version is smaller than the technical version and therefore saves considerably on mass production to the agency and the general public. The participant brought back the report and it is now being implemented in DART's 2040 Transit System Plan. It will help DART's dissemination of their transit service growth strategies to all of DART's customers as well realize some internal cost savings. They are currently

**Drone Use in Asset Management**

During the 2017 program two LA Metro participants heard a presentation about the use of drones for asset management purposes while visiting Denver RTD. They were able to meet the person who flies the drones during one of the Meet Your Match sessions, where they had an extended conversation about the drone use. Metro had received an unsolicited proposal for drones through the Office of Extraordinary Innovation. They are currently in the process of working with the proposer to come up with a proof of concept to see if the technology is viable for Metro.

### Business Case Timeline

**Now it's your turn!** Each of you identified or were assigned a Business Problem to work on during your EnoMAX program year, culminating in a Business Case presentation to your Executive Team. The EnoMAX program components and personnel as well as your agency personnel will support your research and analysis with training, coaching, identifying resources, establishing meetings with peers and experts, exposing you to best practices in your business case functional area, building relationships with peers at each agency, developing simulations and practice sessions, all in an effort to help you develop your Business Case, and move it forward to implementation. Below is the timeline for all of the Formal Business Project Training you will participate in during the Program Year. The following pages provide details on each of the stages and individual sessions, summaries of key points of the presentation and activity sheets for activities we will be working on during the training session. The Power Point used in the training as well as reference documents will be available on the Eno website on the day following the presentation.



### Business Case Timeline

#### Enrollment Stage (Prior to 1<sup>st</sup> Agency Visit)

<b>Problem Identification</b>	<p>You will identify a problem or opportunity that you will work on as your Business Case throughout the EnoMAX program year.</p> <p>Business Cases will be approved as designated by your Agency including; your department management, Agency Facilitator and/or Senior Team.</p>
<b>Business Project Description</b>	<p>Agency Facilitators will describe the Business Case plan and expectations during your internal orientation.</p> <p>Eno Transportation Center will further detail the Business Case process including; terms, definitions, desired outcomes, forms and next steps during the Welcome Webinar.</p>
<b>Refining Description</b>	<p>Following the Welcome Webinar, you will access the Max Business Project Form online at; <a href="https://enotrans.formstack.com/forms/max_business_project_forms/">(https://enotrans.formstack.com/forms/max_business_project_forms/)</a> and complete all fields/questions. This expands on the brief description you made on your Enrollment Form.</p>


#### 1st Class Meeting/Agency Visit

<b>Business Project Description</b>	<p>Eno will deliver a <b>Welcome</b> session which will include an overview of the Business Project activities, including; expectations and timeline.</p>
<b>Business Case Training</b>	<p>Eno will deliver a <b>Guidelines to a Successful Business Case</b> workshop in the first few days of this visit. Key points of this workshop are;</p> <ul style="list-style-type: none"><li>○ <b>Business Project Worksheet</b><ul style="list-style-type: none"><li>▪ Business Problem/Opportunity Statement</li><li>▪ Current Situation Analysis</li><li>▪ Research Plan</li><li>▪ Evaluation of Options</li><li>▪ Recommended Path Forward</li></ul></li></ul> <p>During this workshop, you will refine your Problem Statement, begin work on your Situation Analysis and Research Plan sections of the Business Project Worksheet.</p>

**Business Case Timeline**

**Business Project Info Exchange** Based on the descriptions of your business case and problem statement, submitted online you will be paired with a resource from the Host Agency (Business Project Info Exchange – BPIE). This resource will be able to provide you with information, direction, best practices or data related to your Business Problem (Opportunity). Refer to questions that you included in your Research Plan. Begin collecting relevant information and data at this meeting.

**Business Coaching** Students from the Host Agency will have a Coaching session with the Eno Facilitator. The Eno Facilitator will assist you in fine tuning your problem statements, developing questions for your interviews, and providing general advice on the direction of your business case.

 **Eno Website:**  
[Business Project Worksheet and Annotated Business Project Worksheet](#)

**2nd Class Meeting**

**Business Project Info Exchange** BPIE #2 - Based on the descriptions of your business case and problem statement, submitted online you will be paired with a resource from the Host Agency (Business Project Info Exchange – BPIE). This resource will be able to provide you with information, direction, best practices or data related to your Business Problem (Opportunity). Refer to questions that you included in your Research Plan. Continue collecting relevant information and data at this meeting. Collect additional relevant information and data.

**Business Coaching** Students from the Host Agency will have a Coaching session with the Eno Facilitator. The Eno Facilitator will assist you in fine tuning your project statements, developing questions for your interviews, and providing general advice on the direction of your business case.

**Progress and FAQ** Eno will conduct a short Question and Answer session with students to gauge progress and clarify any concerns students have.

**Public Speaking Workshop** The Public Speaking workshop presented will provide general cues on speaking in front of groups as well as specific hints for delivering your Business Case simulation pitch at the last Agency Visit in preparation for your presentation to your Senior/Executive Team after the program.

### Business Case Timeline

#### 3rd Class Meeting

- Business Project Info Exchange** BPIE #3 - You will be paired with a resource from the Host Agency (Business Project Info Exchange – BPIE). This resource will be able to provide you with information, direction, best practices or data related to your Business Problem (Opportunity). Refer to questions that you included in your Research Plan. Continue collecting relevant information and data at this meeting. Collect additional relevant information and data.
- Business Coaching** Students from the Host Agency will have a Coaching session with the Eno Facilitator. The Eno Facilitator will assist you in fine tuning your project statements, developing questions for your interviews, and providing general advice on the direction of your business case.
- Progress and FAQ** Eno will conduct a short Question and Answer session with students to gauge progress and clarify any concerns students have.
- Defining and Evaluating Options** Eno staff will provide a brief workshop on defining and evaluating options. It is important to use appropriate criteria when evaluating options and include a full range of options. This section of the Business Project Worksheet is very important in providing your Executive with enough information to make a decision on whether to implement your recommended option.

#### 4th Class Meeting

- Business Project Info Exchange** BPIE #4 - You will be paired with your final resource from a Host Agency (Business Project Info Exchange – BPIE). This resource will be able to provide you with information, direction, best practices or data related to your Business Problem (Opportunity). Refer to questions that you included in your Research Plan. Continue collecting relevant information and data at this meeting. Collect additional relevant information and data.
- Business Project Coaching** Students from the Host Agency will have a Coaching session with the Eno Facilitator. The Eno Facilitator will assist you in fine tuning your project statements, developing questions for your interviews, and providing general advice on the direction of your business case.
- Pitch Guidelines** Eno Facilitator will provide information on the Pitch Simulation activity as well as Giving Feedback, as you will be providing feedback to your teammates during the Simulated Pitch Activity.

**Business Case Timeline****Pitch Simulation**

You will deliver a 5-minute pitch of your business project to a mock CEO. You will respond to questions from this CEO about your Business Case.

The CEO will debrief by giving you advice on both content and delivery.

**Post EnoMAX****Business Pitch**

Deliver your final Business Project pitch to senior executives at your home agency.



## Business Project Worksheet

An important tool that we will be using throughout this process is the **Business Project Worksheet**. This Worksheet provides a logical structure for the information you will be collecting and supports the format of the Business Case that you will be developing. Each training session will go through specific sections of the worksheet in chronological order. Below, you will find an annotated version of the form and on the following page a blank Worksheet to use.

Business Project Worksheet	
<b>Business Problem/Opportunity Statement</b>	1-2 paragraphs summarizing your Business Project
<b>Situation Analysis</b>	<ul style="list-style-type: none"> <li>• Background and History</li> <li>• Perception of Current State</li> <li>• Projections if current state continues</li> <li>• Work that may have already been done</li> <li>• Financial, operational impacts</li> </ul>
<b>Research Plan</b>	<ul style="list-style-type: none"> <li>• Information needed from home property</li> <li>• Key questions of Speakers/Matches</li> <li>• What to look for on Tours/Site Visits</li> <li>• Written information or data needed</li> </ul>
<b>Evaluation of Options</b>	<p>The what, why and how questions of the project</p> <ul style="list-style-type: none"> <li>• List all Options (including NO ACTION)</li> <li>• Identify Critical assumptions</li> <li>• Required resources</li> <li>• Organizational capability</li> <li>• Key interdependencies               <ul style="list-style-type: none"> <li>○ Completion of other projects</li> <li>○ Availability of key personnel</li> <li>○ Risks associated with failure of interdependencies</li> </ul> </li> <li>• Identifies areas impacted               <ul style="list-style-type: none"> <li>○ Own department, Other internal departments, External entities</li> </ul> </li> <li>• Key decision criteria               <ul style="list-style-type: none"> <li>○ Benefits</li> <li>○ Costs</li> <li>○ Operational</li> <li>○ Customer impacts</li> </ul> </li> </ul>
<b>Recommended Path Forward</b>	<ul style="list-style-type: none"> <li>• Summarize preferred recommendation</li> <li>• Reasoning supporting recommendation</li> <li>• Identify next steps               <ul style="list-style-type: none"> <li>○ Who is responsible for project implementation?</li> <li>○ Major schedule milestones</li> </ul> </li> </ul>

**Business Project Worksheet**

**Business Problem/Opportunity Statement**

**Situation Analysis**

**Research Plan**

**Evaluation of Options**

**Recommended Path Forward**

**Business Project Worksheet**

*(Example)*

**Business Problem/Opportunity Statement**

As public transportation vehicles become more technically complex, our maintenance staff are increasingly confronted with maintenance and repair situations for which they have not been adequately trained or prepared. These situations can lead to longer vehicle downtimes, reduced capacity to transport our constituents in a timely manner, and higher fleet maintenance costs.

This study will investigate how other agencies identify, deliver, and track key training requirements and certifications; how new employee skills gaps are identified and addressed; what training methods are used to keep staff competencies current with industry advancements; and what are the most effective training management systems available. The intent of this project is to create an agency plan to elevate our training programs to address our issues.

**Situation Analysis**

**Research Plan**

**Evaluation of Options**

**Recommended Path Forward**

***What is the Problem?***

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***What is the Desired outcome?***

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**Business Project Worksheet**

*(Example)*

**Business Problem/Opportunity Statement**

As public transportation vehicles become more technically complex, our maintenance staff are increasingly confronted with maintenance and repair situations for which they have not been adequately trained or prepared. These situations can lead to longer vehicle downtimes, reduced capacity to transport our constituents in a timely manner, and higher fleet maintenance costs.

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**Situation Analysis**

Vehicle downtime in all maintenance categories; routine inspections, cyclical parts replacement and unplanned repairs have increased in the 18 months since the new (computerized) vehicles have arrived on the property. Data investigation reveals the following for each of the major cause categories, since 3/2017;

- Routine inspection increased 12% in first 6 months then declined to 5% increase
- Cyclical parts increased 4% in the first 6 months and continued to increase to 14%
- Unplanned repairs increased 7% in the first 6 months and has increased to 10%

The Maintenance supervisors have investigated the problem and determined that lack of training is the cause. The routine inspection has begun to stabilize because the same personnel perform the inspections daily and have learned from one another and their own mistakes how to conduct the routine inspection. The other maintenance categories do not have consistent task or knowledge base, each instance presents new. Overall vehicle downtime in the last 30-day period for this equipment type is at 12%, the standard for each equipment type is 4% to allow us to provide service without overcrowding or annulling runs. There was maintenance personnel training for supervisors and 10 maintenance technicians at each maintenance facility. There was also videotaped training provided by the manufacturer. This is consistent with maintenance training within the department.

**Research Plan**

**Evaluation of Options**

**Recommended Path Forward**

***What is the key information in the Situation Analysis?***

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**Research Plan**

A successful Research Plan identifies what you will be investigating. Below are some tips for types of interviews, questions and data collection you may need for your analysis;

**At Each Agency Visit**

- Interview and network with resources from BPIE Sessions
- Ask questions of relevant speakers/tour guides
- Collect relevant printed best practices information
- Visit relevant sites on tours or specially arranged visits

**At your host property, host week**

- Refine your project with Facilitators

**At work**

- Follow up with contacts
- Collect documents and data
- External research
- Discuss projects with facilitators and supervisors

**Additional Considerations**

- Interview Targets (Experts, Supervisors, Contractors, Operators, etc.)
- Interview Questions
- Data to collect
- Industry Best Practices
- Industry Standards
- Regulatory Requirements
- Documents to collect

***Take 10 minutes to begin drafting your research plan.***

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## Defining and Evaluating Options

As you are conducting your research you will begin to formulate potential solutions (options) to your problem. To help you pick the right option to move forward, follow this process and be consistent.

- I. List Options
- II. Define and Describe Options
- III. Evaluate and Compare Options
- IV. Rank options and Select Recommended Path Forward

### List Options

Begin listing these options in the Evaluation of Options section of the worksheet. List all options including *No Action*. Do not eliminate options during the listing process, even if they seem untenable.

### Define and Describe Options

Include sufficient detail when defining each option. Make sure you include the same information for each of the options so that you are comparing the same information categories and are not skewing your evaluation. Some areas to include in your definitions;

- Critical assumptions
- Required resources
- Organizational capability
- Key interdependencies
  - completion of other projects, availability of key personnel, risks associated with failure of interdependencies
- Identify areas impacted
  - own department, other internal departments, external entities

### Evaluate and Compare Options

When establishing your decision criteria, consider the following;

#### Financial Analysis

- Costs/benefits for each option including no-action
- Consider every associated cost
- Ensure affordability
- Project ROI
- Identify predicted budget and cash flow implications

#### Operational Analysis

- Industry/Regulatory Standards
- Consistency with existing infrastructure/equipment
- Personnel

#### Customer Impact Analysis

- Ease of use
- Familiarity
- Cost to use

- Impact to current system

**Benefits**

- External Public Relations
- Long Term feasibility

**Rank options**

Based on the evaluation and comparison, you should be able to rank your options to move towards your preferred option.

***What are some criteria you would use to evaluate your options?***

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***Are there any critical assumptions that would result in a NO GO decision?***

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**Recommended Path Forward**

The final step in the evaluation process is ranking the options and selecting a recommended path forward. The highest ranked option is not always the recommended option. Consider Critical Assumptions, Risk, Constraints and Limitations when making your final decision.

Summarize your preferred recommendation and thoroughly describe it. It is important to provide the reason for making your selection. What is it about this option that provides a better solution to the problem than all the other options? Identify next steps if this option is greenlighted; who is responsible for project implementation, major schedule milestone, and possible project staging.



## Business Case

Written or verbal presentation that is intended to educate a decision maker and convince them to take some kind of action. The proposed scope influences size and detail of the document.

### Producing Business Case Document(s) from your Business Project Worksheet

1. **Remove the Research Plan**  
*Do* include who you talked to and where you collected data in the *Evaluation of Options* and *Recommended Path Forward* sections
2. **Add Implementation Plan Section**  
Include the basic timeline, resources required, and costs of implementation
3. **Add Executive Summary**  
Typically written after the remainder of document is finished, sometimes is the only section an Executive reads, includes essential points in the same order as the full document

### Proposed scope influences size and detail of document

Business Case for <u>Project Name</u>
<p><b>Executive Summary</b> <i>Typically written after the remainder of document is finished, sometimes is the only section an Executive reads, includes essential points in the same order as the full document;</i></p> <ul style="list-style-type: none"> <li>• Business Problem/Opportunity Statement</li> <li>• Situation Analysis</li> <li>• Evaluation of Options</li> <li>• Recommended Path Forward</li> <li>• Implementation Plan</li> </ul>
<p><b>Business Problem/Opportunity Statement</b> <i>may be refined from your original statements as you have collected specific information during your research.</i></p>
<p><b>Situation Analysis</b> <i>Includes your situation analysis</i></p>
<p><b>Research Plan</b> Eliminate this section, but discuss who was interviewed and data/documents collected and reviewed as part of your Evaluation of Options and Recommended Path Forward sections</p>
<p><b>Evaluation of Options</b> <i>Detailed list of all available options (including DO NOTHING, evaluated against Decision Criteria you identified. It is important to evaluate all options against all criteria, so that readers of your Business Case will understand why you have made your decision.</i></p> <p><i>RISK should also be addressed in this section for each option. The risk of implementing the solution and the risk of not implementing the solution should both be discussed as applicable to each option.</i></p>
<p><b>Recommended Path Forward</b> <i>Ranking of Options, Identification of option selected and reasoning, any risks and associated mitigation</i></p>
<p><b>Implementation Plan</b> <i>Discuss the basic framework for the implementation of the recommended option. Include; Basic timeline, resources required, costs of implementation</i></p>

**Refine your Business Problem/Opportunity Statement**

*A model for a basic Problem Statement*

Problem of \_\_\_\_\_ has the effect of \_\_\_\_\_, with the impact of \_\_\_\_\_.

**What is the Problem you are investigating? Refine your Problem Statement**

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**What is the Desired outcome? What are you hoping to impact?**

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**Begin Situation Analysis by describing your current situation...**

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### Evaluating Options

Choose relevant decision criteria and evaluate each option against the criteria. Then compare and rank the options leading to a recommended path forward. Don't forget to consider the following;

- Risk  
Assessing and Mitigating Risk
- Critical assumptions  
No Go Criteria
- Constraints/Limitations

**What are some criteria you would use to evaluate your options?**

Decision Criteria	Option 1	Option 2	Option 3
<b>Are there any critical assumptions that would result in a NO GO decision?</b>			

### Business Pitch

The Business Pitch is an opportunity you may get to present/explain your business, its benefits, overall costs and preferred recommendations

It can take many forms, including;

1. "Elevator Pitch" – a 5-7-minute quick synopsis of your project and reasons for implementing your preferred recommendation
2. Executive Briefing – short structured meeting with Executive(s), may or may not include handouts or visual presentation
3. Visual presentation – slide presentation
4. Executive Summary – section of Business Case that is shared with Executive(s) with or without a verbal presentation

During your 4<sup>th</sup> visit, you will be provided with Guidelines for a Business Pitch, which includes elements of 1, 2, and 4. You will subsequently deliver this Business Pitch at a *simulated CEO meeting*. A Transportation Executive (former or present) will serve as a CEO and you will "Pitch" your Business Case. The Pitch;

- Each Agency's Team will be assigned to a mock CEO. The team should decide order of presentations beforehand.
- Each presentation will last for no more than five (5) minutes. Deliver your pitch as though the mock CEO is your agency's CEO. Assume those participating in the exercise have local knowledge of your system and function within the organization.
- There will be an approximately five (5) minute debrief following each presentation. After you are done speaking, the CEO will ask questions about the pitch "in character." The other students are invited to offer constructive feedback about the content or the presenter's delivery. The CEO may also offer feedback "out of character."

### Giving and Receiving Feedback

There are several models for providing feedback. With the ease of accessing incredible amounts of information on the internet from our devices anywhere/anytime, the difficulty becomes sifting the information for the target audiences and the types of feedback models that we determine are needed. There are models for appreciation, models for constructive criticism, balanced models, models for increasing performance results, and models for discipline-based feedback. There are models for feedback to subordinates, superiors, and peers, for individuals and for groups. There are also models specifically for providing written feedback.

Effective feedback provides motivation, direction, reinforcement, and encouragement to continue. What effective models have in common is feedback that is clear and specific, short, based on observations, non-judgmental, sincere, and given as close to real-time as possible.

Specificity with appreciative feedback helps the recipient understand exactly what was appreciated. Vague appreciate feedback such as "Great job! Keep up the good work!" may feel good but does not provide anything to build upon. Constructive feedback that includes specific suggestions for change or improvement helps the recipient in moving towards a better result.

Non-judgmental feedback is describing behavior(s) by way of reporting what was factually observed, while judging behavior is an evaluation of what was observed in terms of "right or wrong", or "good or bad". By avoiding evaluative language, you reduce the need for the recipient to respond defensively.

Observations refer to what you can see or hear, while inferences refer to the assumptions and interpretations you make from what you see or hear. Focus on what the person did and your reaction. Additionally, focus on the observed behaviors rather than the person.

Much of the feedback offered during the MAX program will be peer based and real-time. Here are three types of short feedback for use during the MAX program.

#### **Appreciative**

Is a positive reinforcement that encourages repetition of effective behavior.

- Describes the specific behavior.
- Explains why the behavior is valued.

#### **Constructive**

Is a reinforcement that attempts to discourage repetition of a behavior by providing a more effective and productive alternative behavior.

- Explains a behavior that is more effective.
- Explains why the proposed behavior is valued.

#### **Balanced**

Feedback that offers both strengths and opportunities to the recipient in one short statement.

- Describes one strength and one opportunity.
- Both should be offered by the feedback presenter as the most impactful points observed.
- Should use one of the following formats or equivalent
  - "What I thought you did well was..."
  - "What I thought you could improve was..."

- “What was effective was...”
- “What I thought would make it even more effective was...”

### Receiving Feedback

The people offering you feedback during MAX care about your success. Therefore, feedback should be viewed as a gift. Here are points to consider, especially when you receive feedback in group environments:

- Ask short questions for clarity if needed
- Do not argue the feedback offered or offer explanations as rebuttal
- A simple thank you is appreciated and all that is necessary

**Business Project Worksheet**

*(Vehicle downtimes Example)*

**Business Problem/Opportunity Statement**

As public transportation vehicles become more technically complex, our maintenance staff are increasingly confronted with maintenance and repair situations for which they have not been adequately trained or prepared. These situations can lead to longer vehicle downtimes, reduced capacity to transport our constituents in a timely manner, and higher fleet maintenance costs.

This study will investigate how other agencies identify, deliver, and track key training requirements and certifications; how new employee skills gaps are identified and addressed; what training methods are used to keep staff competencies current with industry advancements; and what are the most effective training management systems available. The intent of this project is to create an agency plan to elevate our training programs to address our issues.

**Situation Analysis**

Vehicle downtime in all maintenance categories; routine inspections, cyclical parts replacement and unplanned repairs have increased in the 18 months since the new (computerized) vehicles have arrived on the property. Data investigation reveals the following for each of the major cause categories, since 3/2017;

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The Maintenance supervisors have investigated the problem and determined that lack of training is the cause. The routine inspection has begun to stabilize because the same personnel perform the inspections daily and have learned from one another and their own mistakes how to conduct the routine inspection. The other maintenance categories do not have consistent task or knowledge base, each instance presents new. Overall vehicle downtime in the last 30-day period for this equipment type is at 12%, the standard for each equipment type is 4% to allow us to provide service without overcrowding or annulling runs. There was maintenance personnel training for supervisors and 10 maintenance technicians at each maintenance facility. There was also videotaped training provided by the manufacturer. This is consistent with maintenance training within the department.

**Research Plan**

- **Interview Maintenance Technicians** – What type of training did you receive on new equipment? How comfortable are you performing maintenance and inspections tasks on the new vehicles? Who are the experts that you can seek help from? What type of training would you like to be able to make required repairs?
- **Interview Maintenance Supervisor** -
- **Interview Maintenance Training Manager** – How did technicians perform during the training for new equipment? How long was the training in comparison to training for other equipment types? Is there any hands-on training? Are there videotaped training sessions? What is the cost of providing additional training?
- **Interview Capital Equipment Acquisition Engineer** – Was there training provided as part of the Equipment Acquisition contract? Are there any options for training to be provided by the original manufacturer? Are there any job aids available for the training and reference of maintenance personnel?
- **Collect Vehicle Performance Data** –
- **Other users of equipment** – How did you train your maintenance personnel? Did vehicle availability decline with the implementation of the new vehicles?



**Business Project Worksheet***(Vehicle downtimes Example)***Evaluation of Options**

1. Provide additional Training to all maintenance staff
2. Train a cadre of experts assigned to the newer equipment
3. Assign a Mentor in each maintenance facility to oversee repair, inspection and maintenance of the newer equipment
4. Purchase additional training from the Manufacturer Training
5. Purchase or develop Videotape training
6. Move all newer vehicles to one shop and retrain all employees at that shop

**Criteria for choosing an option**

Improve vehicle availability within 6 months of implementation of option

Employee performance improves by at least 10 points on a Before and After hands on performance test

Cost of option does not exceed \$75K

**Recommended Path Forward**

Unplanned repairs go to one shop, where there is a cadre of experts

Retrain all maintenance employees to perform basic inspections

Retrain a specific team of employees at each shop to perform cyclical parts replacements

### Business Project Worksheet

*(Real Life Example)*

#### Business Problem/Opportunity Statement

Metro-North Railroad is faced with the need to increase its ridership and fare revenues. Competitive publicly funded bus services operating out of train stations are being started by the State of New York.

Politicians are criticizing the size of Metro-North's operating subsidy and questioning the continuation of service at its current levels.

#### Situation Analysis

Over the past 10 years, ridership has declined about 15% and absent some action this trend is expected to continue in the future. Ridership is falling in all markets (peak, off-peak) and all lines. Population in the service area has increased by about 5% over the past ten years but has been constant in the past year

The primary reason for this ridership decline is poor service. The primary problems are late trains, dirty trains, surly train crews, and inadequate schedules. These are a result of very poor infrastructure (primarily track and signals and power systems), cars and locomotives beyond their useful life and lack of front-line staff training. These in turn have been caused by a lack of funding for the past decades

On the positive side, there is an opportunity to increase ridership and revenue by expanding market share. Previous market studies have shown that this is especially true for off-peak markets

#### Research Plan

- Planning Department Ridership Data
- Market Share Data
- On-time performance Data
- Customer Performance Indicators
- Customer Complaints
- Budget Department
- Maintenance of Way Department
- Governmental Relations Department
- MTA Board Budget Information
- Capital Funding Plan(s)

#### Evaluation of Options

##### Options

1. Do nothing and let the political environment resolve the problems
2. Raise fares focusing on the least elastic market (peak commutation fares) and reduce service
3. Request additional monies to bring the system into a state of good repair
4. Request further additional monies to expand service

**Business Project Worksheet***(Real Life Example)***Evaluation of Options****1. Do Nothing**

- Lose control of organization and its future
- Likely to have unfavorable outcome

**2. Raise fares and reduce service**

- Continued ridership decline
- Raise \$20,000,000
- Negative customer reaction
- Alienate key political leaders

**3. Request additional monies for state of good repair**

- Likelihood of success is unknown
- Crisis environment may help
- Lack of repairs may jeopardize future safe operation of the railroad
- Pre-requisite for railroad to improve service and grow
- Will need major organizational expansion to plan and implement program
- Does not provide immediate solution

**4. Request further additional monies for service expansion**

- Similar pros and cons as above
- Will need further expansion of organizational capabilities
- Service expansion may impede progress to bring system into a state of good repair
- Few people may ride as service will remain of poor quality
- Political risk if ridership does not increase and subsidies increase

**Recommended Path Forward**

Recommend Option 3 while suggesting Option 4 for the future

- Operational safety
- Necessary for organizational future
- Phased approach which is easier for political leaders and customers to accept
- Does not over promise nor jeopardize monies for state of good repair work
- Suggest that MNR President get approval from MTA Chairman and then have Government Affairs department develop a detailed plan for requesting the funding