narrativewave

Analytics Project Template

Directions:

The right approach to analytics improvement requires a problem solving attitude and eyes on the best practices to ensure success. This plan provides the important steps to preparing for and going through an analytics project.

Need more guidance?

Download the white paper, 'Guide to Launching a Successful Analytics project' **here.**

STEP 1:

Determine the key problems you are trying to solve

The first step in any analytics project is figuring out where to start. We recommend starting at the end, or more specifically, the problem you are trying to solve.

Perform a quick investigation to determine where you have gaps—both in data and process. From there, you can figure out what additional data needs to be collected. To perform your investigation into the problem you are trying to solve (typically downtime), work with your team to answer the following questions.

Investigation Questions	**Yes/No**	**Why** (What is the current process?)
Are you collecting the right data on asset performance that could alert you to an issue?		
Is the data you are collecting accurate? Are you getting alerts from the data, but ignoring them because there are too many?		
Do you have the information to be able to analyze the alerts?		
Is the right information getting to the field engineers at the right time?		
Are fixes happening proactively or reactively?		
Are you getting feedback on the success or failure of the fix?		
Do you have gaps in your process that are adding time or complexity?		

STEP 2:

Evaluate Data Collection and Accuracy

Question #2 from the above investigation questions is not one to take lightly. Understanding whether or not the data you are working with is high quality and accurate is critical.

To tackle this, a small data curation project is warranted specific to the problem you are trying to solve.

For each data problem found, try to identify the root cause and propose a resolution. This will begin to lay a foundation for smaller projects to tackle that will begin to solve the larger issue.

Examples of data curation and validation:

Example	Data issue identified	Suspected root cause	Proposed resolution
1	Solar irradiance data is periodically missing over 6 months of data	Unreliable pyranometer	Create a way to bring in multiple 3rd party solar irradiance data sources to fill in the gaps
2	Anomalies found in what should be consistent data	Data is not being collected in consistent intervals causing results of calculations to be unreliable	Create custom way to smooth data to remove natural inconsistencies
3	Gaps in data	Missing or mis-read data	Use data interpolation techniques to fill in missing data

Important tip: If any of the problems identified can be solved without a new analytics solution, go ahead and solve them. Having more accurate data when you begin the project will make the project run that much smoother.

STEP 3:

Look for Process Gaps

Many of the investigation questions in Step 1 are aimed at internal processes. This is such a big opportunity for improvement that is often overlooked when people typically scope analytics projects. Instead of just thinking about how it would be great to be alerted about potential issues proactively, it is beneficial to also think about all the steps in the process to effectively manage issues and assets.

Identify the Following:	
Which person or group of people should be identified when an issue occurs?	
What information should be conveyed to those people?	
What action(s) should be taken and whom should those actions be assigned to?	
What feedback is needed after issues are identified, and who should receive that feedback?	

The end result should be the identification of the detailed steps for the process to work in the best way possible. Use the example format for detailing your processes.

STEP 4:

Complete a SWOT Analysis of Products

Evaluate and select analytics solution

Key features to include:

- Predictive - indicate issues before downtime occurs
- Event management - alerts on multiple factors
- Automated prioritization
- Machine learning to monitor trends and flag anomalies
- Tracking workflow actions/repair success to recommend actions that will best resolve the issue
- Ability to easily modify equations themselves, simple editor or code level

	Software X	Software Y	Notes
Anomaly Detection			
Workflow Automation			
Advanced Analytics			
Process Automation			
Alert Management			

STEP 5:

Calculate Potential Savings (Build a Business Case)

Once you've found the analytics solution that will help you to improve operational processes, you need to get internal support to make the purchase. This involves building a business case and possibly running a pilot to showcase capabilities. Because implementing a new analytic solution takes time and involves change, it is common to estimate the value that will be created using several methods. This can be a combination of both qualitative and quantitative approaches.

Some of these techniques include:

Sample Techniques to Explore:	
Identify the current/old process, the new process you intend to deploy, and show where there are efficiency gains. *E.g. improve from weekly analysis of efficiency to automated daily analysis, allowing losses to be captured sooner.*	
Identify losses related to asset performance (such as downtime, efficiency losses, raw material consumption etc.), and estimate gains.	
Identify efficiency gains that could be achieved across the operations by using one specific high valued example as the reference case.	

STEP 6:

Implement analytics solution and continuously improve

The biggest mistake companies make is starting at this step and then having to go back and do the earlier steps or to pay additional money to have a vendor do it for you.

If you put in the investigation and problem-solving from the earlier steps, you will be well prepared to implement the chosen analytics solution and quickly get value.

Implementing an analytics solution is a collaborative process between the engineering team and the vendor.

- Steps 1 and 2 provide the underlying focus for establishing analytics & detection, asset issues which are being identified, and alert prioritization.
- Steps 1 and 3 provide the ideal workflows for the orchestration of communication among the team. Additionally, having the larger problem broken into smaller projects allows for an agile approach to getting value from your investment.
- No technology knows your assets as well as your engineers do. Make sure they are looking at ways to tweak equations to better fit the operation of your assets. A culture of continuous improvement will help energy companies get the most value from their analytics projects.