

How We Leveraged Data to Overcome Resistance to Investment in Automation



Matt Collier



Michael Kilkelly



John Cook

DIGITAL BUILT WEEK AMERICAS

JUNE 15-17, 2023 | DALLAS, TEXAS

Digital Built Week Americas 2022

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

1

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Session Description

Over the past few years, IMEG has grown its automation capabilities from a handful of Dynamo graphs to a full-fledged software development team. The cornerstone of this growth is usage data. In this presentation, we will discuss how we collected and leveraged this data to convince leadership to invest heavily in custom tools and build a team dedicated to supporting this effort.

Learning Objectives

At the end of this session, participants will be able to:

- Describe the importance of collecting usage data at any stage of your automation journey
- Formulate a plan for what data to collect
- Understand how to calculate the impact of your custom tools
- Understand strategies for collecting usage data
- Understand how to get started with visualizing usage data

[Additional Handouts On GitHub https://github.com/MatthewACollier/BILT2023](https://github.com/MatthewACollier/BILT2023)

IMEG's Automation Journey:

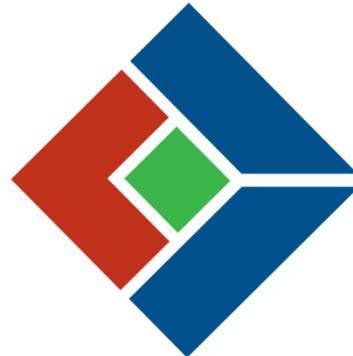


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IMEG's Automation Journey:



Michael Kilkelly

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IMEG's Automation Journey:



Matt Collier



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IMEG's Automation Journey:

Forming a team

2020

- Matt and his team had just released their first electrical plugin
- John and Michael had several plugins created and ready to go
- Combined efforts to create a single IMEG toolbar and rolled it out to the organization

2021

- Officially created product ownership team
- Officially created a development team
- Michael joined IMEG full-time as a product owner

2022 - Today

- We have four product owner, four developers, and the team is growing
- Building several new tools per year



Obstacles Blocking Automation Growth:

- Leadership resistant to new investment
- Resistance to change
- Perceived financial risk
- Desire for hard data
- Justification of new costs at each step
- Proving value of existing portfolio
- Projecting value of new tools



Quantifying the Impact Through Data is Crucial!



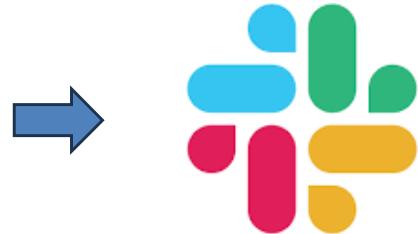
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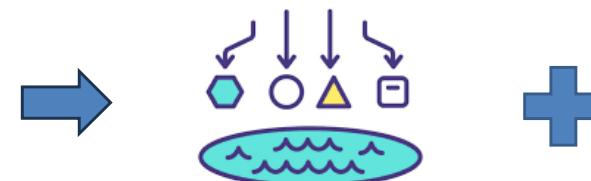
Our Data Collection Journey:



Rough Estimates



Slack



Data Lake

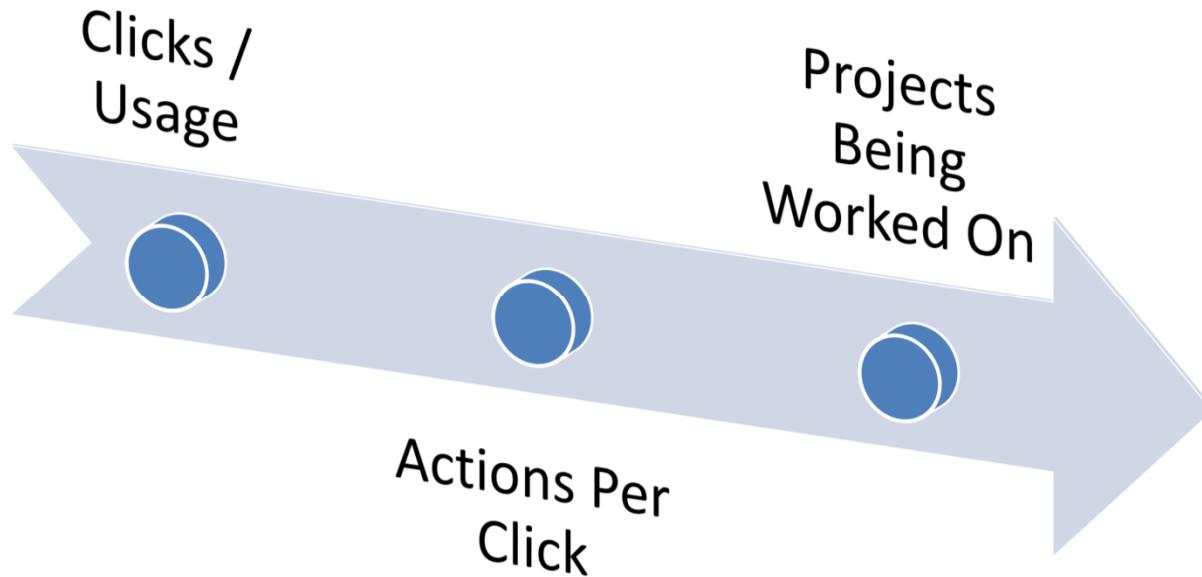


Planning for data collection:

- Data to collect
 - What story are you telling at each stage?
- Quantifying the time saved
- Quantifying the area of opportunity

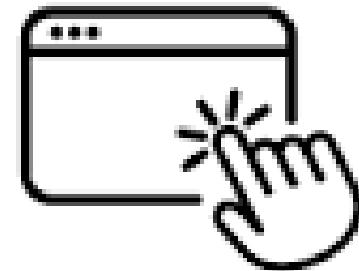
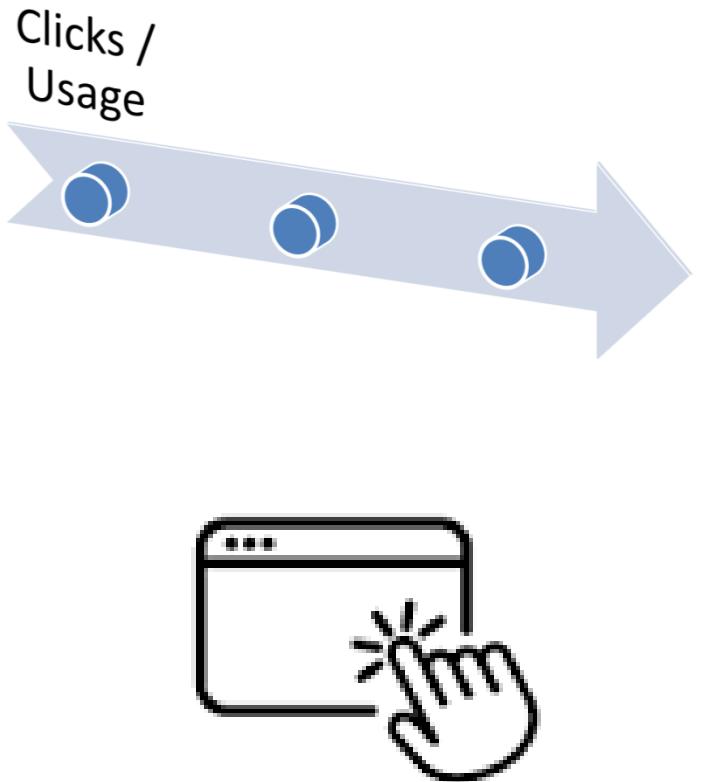


Data to Collect



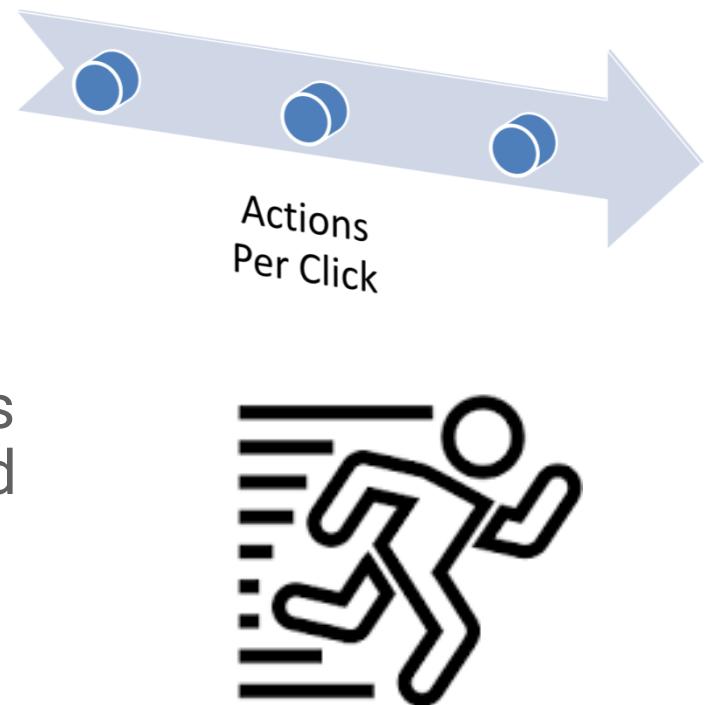
Data to Collect: Clicks / Usage

- In the beginning this may be enough
- What story are you telling at this stage?
- Who used the tool?
 - Name
 - Role
 - Team
- What project was the tool used on?
 - Project number
 - Project name



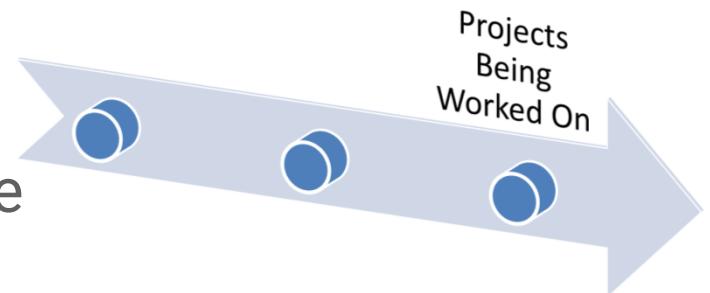
Data to Collect: Actions Per Click

- Basic clicks/usage data is no longer enough, the story now needs more detail
- What story are you telling at this stage?
- Not all clicks have equal value
- By quantifying exactly what the tool does in each usage, you can better understand the impact



Data to Collect: Projects Being Worked On

- You already have a great story proving your tools are being used, and what value they provide, but could the impact be greater?
- What story are you telling at this stage?
- By understanding what projects are actively being opened and worked on, we can understand utilization rates
- This will also help us understand the area of opportunity



Quantifying the Time Saved Per Usage or Action



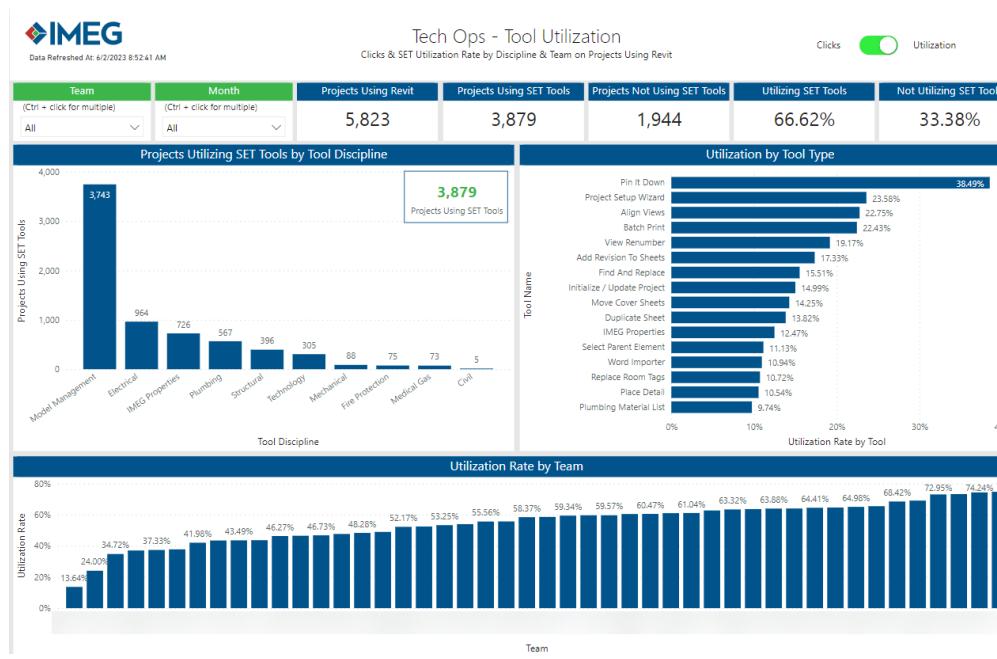
Assumptions



Time Studies

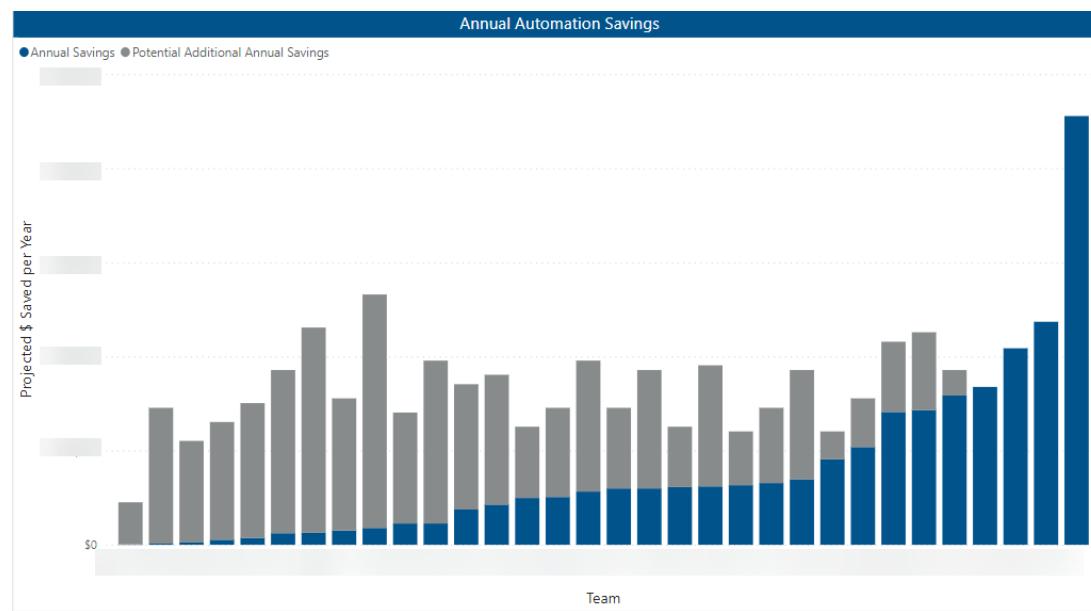
Quantifying the Area of Opportunity

- Utilization rates
 - How many projects are using tools compared to how many are being worked on?



Quantifying the Area of Opportunity

- Set a benchmark
 - We use average time saved per full time employee for the top 1/3 of teams
 - Project that benchmark on all teams based on team size to compare actual time saved to the benchmark



Collecting Data: Method 1: Webhook to Existing Messaging Platform

1. Create Slack workspace and channels for your data
<https://slack.com/>
2. Enable incoming webhooks in your workspace
<https://api.slack.com/messaging/webhooks>
3. Add webhook call to your plugin or Dynamo script
 1. C# example <https://gist.github.com/jogleasonjr/7121367>
 2. Dynamo example <https://radumg.github.io/DynaSlack/>
4. Export messages to CSV file using “/export” command in Slack

Collecting Data: Method 1: Webhook to Existing Messaging Platform

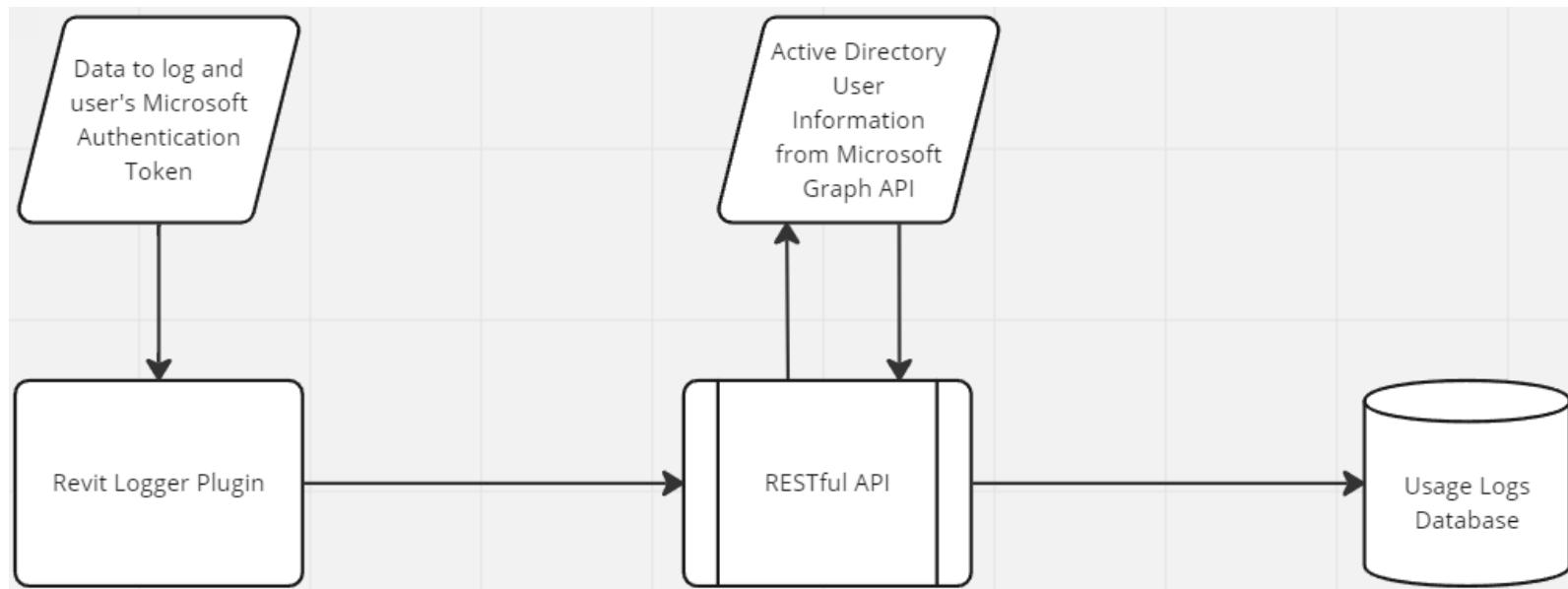
Pros:

- Easy Implementation: Implementing the webhook to a messaging platform like Slack is relatively straightforward and requires minimal coding.
- Real-Time Access: With the webhook, usage data can be accessed and monitored in real time, providing immediate insights into add-in usage.

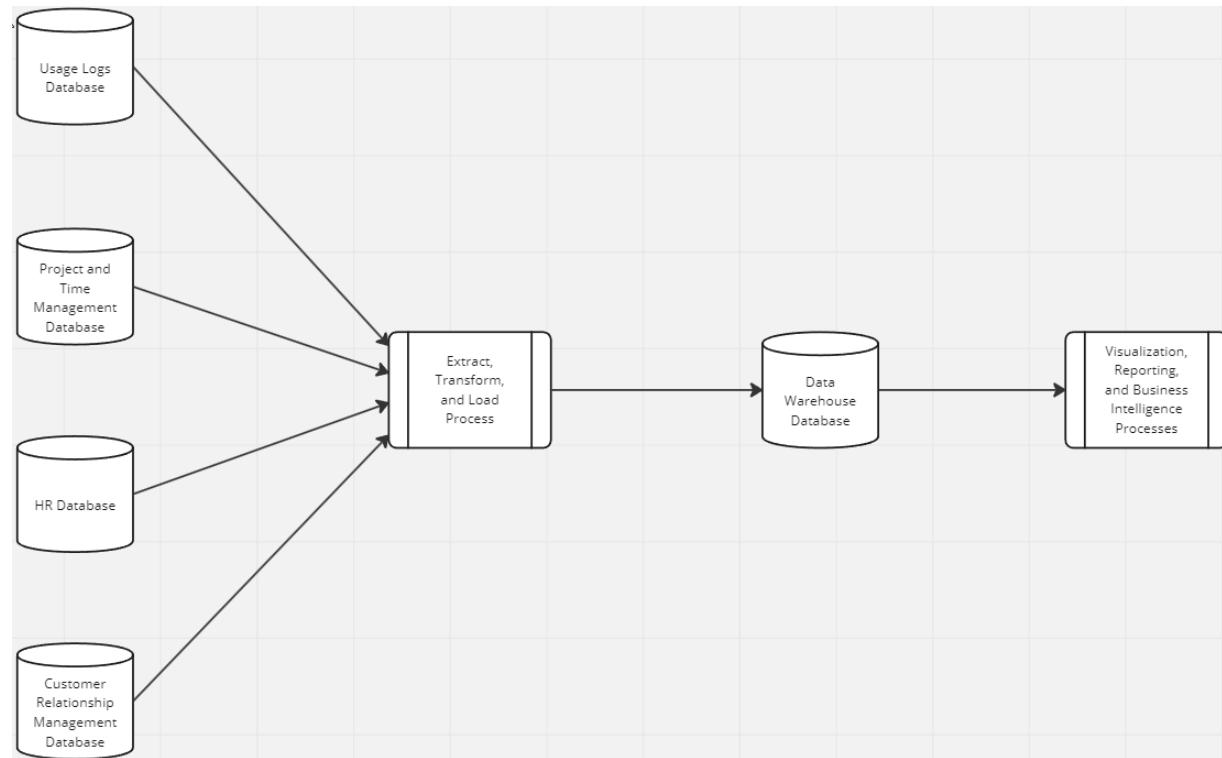
Cons:

- Data Extraction Challenges: While real-time access to user data is beneficial, extracting and manipulating aggregated data from the messaging platform can be cumbersome. Using commands like "/export" in Slack to export message data may require additional data manipulation and analysis steps.

Collecting Data: Method 2: Log to Database Using Custom RESTful API



Collecting Data: Method 2: Log to Database Using Custom RESTful API



Collecting Data: Method 2: Log to Database Using Custom RESTful API

Pros:

- Easy Data Extraction: Logging data directly to a database simplifies extracting and analyzing the collected information. Data can be easily queried and manipulated for further analysis and reporting.
- Incorporation of User-Specific Data: By leveraging the Microsoft Graph API, user-specific data from Active Directory can be seamlessly integrated into the database, providing deeper insights into user behavior and add-in usage patterns.

Cons:

- Implementation Complexity: Compared to the webhook method, setting up a custom RESTful API and database integration requires more technical expertise and effort during the implementation phase.

Visualizing Usage Data: Microsoft Power BI



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Visualizing Usage Data: Microsoft Power BI

- Getting started with Power BI
 - <https://powerbi.microsoft.com/en-us/getting-started-with-power-bi/>
- Add data sources
 - <https://learn.microsoft.com/en-us/training/modules/get-data-power-bi/3-connect-data-sources-power-bi-desktop>
- Add visuals to your report
 - <https://learn.microsoft.com/en-us/training/modules/visuals-in-power-bi/>
- Publish your report
 - <https://learn.microsoft.com/en-us/training/modules/publish-share-power-bi/>

Conclusion:

- To demonstrate value, you must tell a compelling story that quantifies impact
- The story will evolve in multiple stages
 - Identify the story you are telling
 - Plan what data to collect
 - Plan how to collect the data
 - Create visuals to illustrate the story



Reminder

Speaker and Session Feedback is Appreciated

- Go to Sessions
- Select this Session
- Select Session Rating

How We Leveraged Data to Overcome Resistance to Investment in Automation
Session 3.3

Matthew Collier, IMEG | Michael Kilkelly, IMEG | John Cook, IMEG

Visit me at the Speaker Lounge

We will be at the **Speaker Lounge** outside the Exhibition Hall for further conversations. Please join me there at this time:
(Your confirmed date and time here)

Questions?

How We Leveraged Data to Overcome Resistance to Investment in Automation

Matthew Collier, IMEG | Michael Kilkelly, IMEG | John Cook, IMEG