

A Forrester Total Economic Impact™
Study Commissioned By Microsoft
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The Total Economic Impact™ Of PowerApps And Microsoft Flow

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Benefits And Costs



Reduced application development cost and effort:
70%



Reduction in ongoing application management and maintenance effort:
38%



Worker hours saved from streamlined and automated business processes (Year 3):
122,850

Executive Summary

Microsoft provides application development solutions that help its customers speed up application development and empowers non-developers to create applications and automated workflows. Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying PowerApps and Microsoft Flow (Flow). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of PowerApps and Flow on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers using PowerApps and/or Flow. Interviewees said that by reducing application development time and empowering non-developers to create custom applications and workflows they were able to greatly reduce development costs and streamline business processes. These process improvements delivered business benefits such as reduced time-to-market, better customer service, and increased revenues.

Prior to using PowerApps and Flow, all application development was done using traditional tools, and only “high-code” developers were engaged in these activities. This meant that there was a large backlog of IT projects, and many business ideas would never have been translated into system improvements because the cost and effort would be too high. Adopting PowerApps and Flow transformed the IT function from a blocker to an enabler. One interviewee said: “The business is not waiting for IT anymore which was their most common complaint. PowerApps and Flow takes that off the table. We are now seen as an enabler, not a roadblock.”

Key Findings

Quantified benefits. The following risk-adjusted present value (PV) quantified benefits are representative of those experienced by the companies interviewed and applied to a composite organization with 2,000 employees who have access to PowerApps and Flow through their Office 365 and/or Microsoft Dynamics licenses:

- › **The average cost to develop an application is 70% less with PowerApps and Flow.** For applications that can be developed using these new tools and included connectors, the internal development effort, professional services fees, and/or vendor applications purchase costs are much lower. Additionally, the effort to maintain code and manage applications is less. Over the life of the study, \$3.5 million in application development and management costs are avoided.
- › **Developing additional applications in-house eliminated vendor license costs.** Interviewees provided examples of external applications that were replaced with in-house developed applications using PowerApps and Flow. For the study, two applications were replaced with a total savings of \$91,454.

- › **PowerApps and Flow increases process automation and efficiencies.** The applications and workflows that were created digitized existing, manual, and often paper-based processes. The efficiency gains can vary widely by role, and mobile workers especially benefited from these process improvements. Overall, this improved efficiencies on average by 15% for 1,575 users by Year 3 of the study. Applying a 75% discount, because not all productivity gains translate into additional work, \$5.32 million in process efficiencies were achieved.

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:

- › **Streamlining and automating processes delivers business transformation and improved business outcomes.** Interviewees described many ways that their businesses have improved. This includes happier customers, reduced time-to-market, and revenue protection. Because these benefits can vary greatly from one organization to the next, they were not included in the financial analysis.
- › **Employees can make better and faster decisions from better access to information.** Much of the development work completed with PowerApps and Flow enables faster collection of information from firstline workers and transferal to decision makers in a more usable format. This, in turn, means that better decisions are made based on data sets that are larger and closer to real-time.
- › **PowerApps and Flow empowers users which increase employee satisfaction.** Both IT and business users can now more efficiently and effectively create applications that deliver business value. In many cases, these applications would never have been built without these tools. This gives users more control over their work and enables them to eliminate repetitive and annoying manual activities.
- › **Additional value is realized with other Microsoft solutions, such as Dynamics CRM and SharePoint, because PowerApps and Flow extend those solutions' capabilities.** Interviewees described how these solutions, being part of the Microsoft stack, enable them to build on prior investments to create more value. Additionally, tying into the Microsoft Common Data Store (CDS) allows them to easily integrate data across solutions and workflows.
- › **Mobile applications developed with PowerApps and Flow are more secure than would likely otherwise have been developed.** Because these applications and workflows tie into Active Directory (AD) and other Microsoft security solutions, IT can control permissions at the data and application levels. Additionally, users building in these tools helps to reduce shadow IT. All PowerApps that are built on the Common Data Service for Apps are automatically GDPR compliant.

Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

- › **Internal and professional application development costs average \$72,820 per application.** The average cost per application developed with PowerApps and Flow can vary widely based on its functionality and workflow complexity and how experienced users are with the tools. Subtracting these costs from the avoided application development costs in the Benefits section, results in the net savings that the composite organization realized. The total development costs were slightly more than \$1.5 million.



ROI
362%



Benefits PV
\$8.9 million



NPV
\$7.0 million

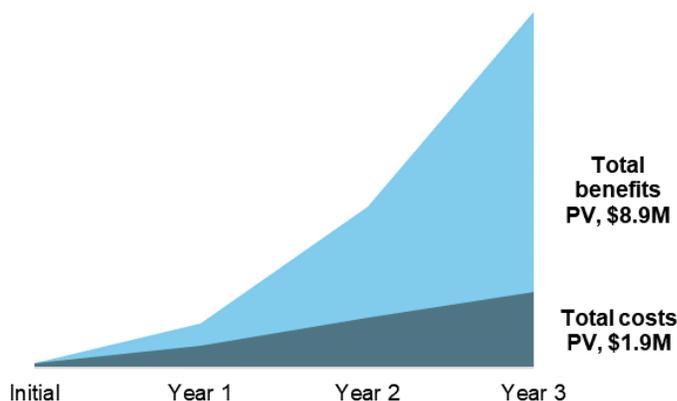


Payback
<3 months

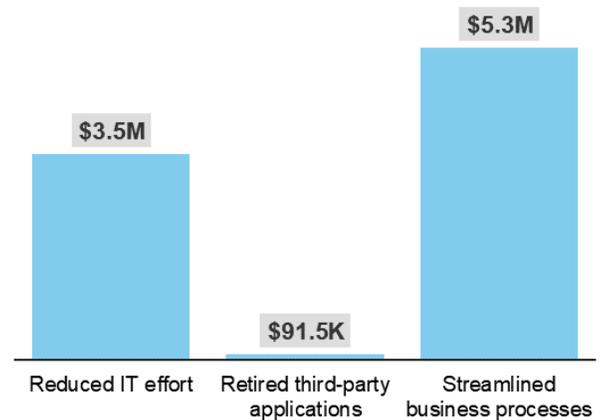
> **Ongoing corporate IT management and development of PowerApps and Flow code and business user training was \$400,154.** The effort to manage the PowerApps and Flow solutions is very low at 0.1 FTE. The corporate IT department is also involved in maintaining and further developing code that has been handed over to them. IT also spends time training business users on how to develop with PowerApps and Flow. The centralized development and training function grows to two FTEs by Year 3 of the study (the 0.1 for solution upkeep is included in here) as the number of PowerApps and Flows increases. Users that require access to advanced features and premium connectors require paid PowerApps P1 or P2 licenses. The number of paid licenses depends on the number of users leveraging the paid features in their apps.

Forrester's interviews with four existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experienced benefits of \$8.9 million over three years versus costs of \$1.9 million, adding up to a net present value (NPV) of \$7.0 million and an ROI of 362%.

Financial Summary



Benefits (Three-Year)



The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing PowerApps and Microsoft Flow.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that PowerApps and Microsoft Flow can have on an organization:



DUE DILIGENCE

Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to PowerApps and Flow.



CUSTOMER INTERVIEWS

Interviewed four organizations using PowerApps and Flow to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.



CASE STUDY

Employed four fundamental elements of TEI in modeling PowerApps and Microsoft Flow's impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Microsoft and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in PowerApps and Microsoft Flow.

Microsoft reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

Microsoft provided the customer names for the interviews but did not participate in the interviews.

The PowerApps And Flow Customer Journey

BEFORE AND AFTER THE POWERAPPS AND FLOW INVESTMENT

Interviewed Organizations

For this study, Forrester conducted four interviews with PowerApps and Flow customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	USERS WITH ACCESS TO POWERAPPS & FLOW
Industrial equipment servicing	North America	VP of IT and purchasing	430
Beverage distributor	US regional	Cloud services manager	1,600
Power generation	North America and Australia	Enterprise architect	2,200
Financial services	UK	Head of CRM solutions	3,500

Key Challenges

The interviewed companies faced common challenges around delivering modern IT, supporting more users and growth, and managing increasing costs.

- › **IT had to support more firstline and mobile workers.** Moving to Office 365 can significantly increase the number of users who are consuming IT services. Additionally, companies are putting more effort into making mobile workers more effective and efficient. Together, these two trends meant that IT struggled to deliver necessary tools to a greatly expanded number of users. One interviewee said: “When we switched to Office 365, we all of a sudden had lot more users to support, and we had to figure out a way to deliver everything mobile first. Now, a guy on a forklift has access to these applications.”
- › **Key business processes were still very manual and often paper based.** Companies were facing increased competition and customer demands, but business processes were often manual which made it difficult to meet new challenges. As an example, one interviewee was “trying to reduce the time it takes to deliver reports to customers.” They were looking for ways to easily streamline and automate processes. The same interviewee reported further: “It used to take over thirty days, and our goal was to create the reports within two days. We are now down to four days with two less resources.”
- › **IT systems did not meet current needs, and there was limited budget to make changes.** Interviewees described an IT estate that could not support new initiatives. When it comes to ERP systems, the cost to upgrade or replace was larger than available budgets. There was also a shortage of application development skills in-house, as well as a lack of budget to outsource development. The interviewed VP of IT and purchasing said: “We have an antiquated ERP system that is the market leader in our industry. We were looking at replacing it but were told there wasn’t budget to do that. We identified some of the biggest limitations and fixed those using PowerApps.”

“We needed to switch to a mobile-centric delivery model to support merchandizers in the stores. We also needed to get information back from them that didn’t require email or driving back to the office.”

*Cloud services manager,
beverage distribution*



Key Results

The interviews revealed that key results from the PowerApps and Flow investment include:

- › **PowerApps and Flow streamlined processes and enabled business transformation.** Interviewees provided many examples of process automation and of reworking old processes that no longer made sense in a mobile-first world. Increased standardization also had a large impact. One interviewee said: “PowerApps and Flow have been a positive disruptor to our business. There are lots of little processes we can automate and knock out of the ballpark.”
- › **Development in PowerApps and Flow saves money.** The financial analysis section of the study includes many examples of cost savings. One interviewee said, “We would not have been able to do any of this development work the old way. We could not have justified the investment. The PowerApps work we did would have cost \$750,000.”
- › **IT organizations are now more responsive to business needs.** Interviewees described how utilizing PowerApps and Flow helped them to create modern IT organizations that can deliver better and faster solutions to the business. One interviewee said: “We can now build once and deploy to different places. The organization didn’t want to invest in traditional application development anymore. We can now make changes on the fly and support a very dynamic business.”

“Traditionally we could do something either right, fast, or cheap. With PowerApps we can do all three.”

*Cloud services manager,
beverage distribution*



Composite Organization

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and is used to present the aggregate financial analysis in the next section.

The composite organization is a 2,000-employee services company. Knowledge workers are predominantly on Office 365 E3 licenses. Firstline workers are on a mix of Office 365 E1 and K1/F1 licenses. These licenses give users access to PowerApps and Flow. There are 50 users with Power Apps P1 or P2 licenses because they are using PowerApps that require premium connectors into ERP solutions.



Key assumptions

2,000 employees

21 development projects

Analysis Of Benefits

QUANTIFIED BENEFIT DATA AS APPLIED TO THE COMPOSITE

Total Benefits

REF.	BENEFIT	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Reduced IT effort	\$90,000	\$738,000	\$1,602,000	\$1,890,000	\$4,320,000	\$3,504,861
Btr	Retired third-party applications	\$0	\$22,500	\$45,000	\$45,000	\$112,500	\$91,454
Ctr	Streamlined business processes	\$0	\$362,578	\$1,885,406	\$4,568,484	\$6,816,469	\$5,320,173
	Total benefits (risk-adjusted)	\$90,000	\$1,123,078	\$3,532,406	\$6,503,484	\$11,248,969	\$8,916,488

Reduced IT Effort

All interviewees provided many examples of PowerApps and Flow reducing IT cost and effort. The level of savings varies greatly based on the scope of the development effort. A large contributor to the effort reduction is using off the shelf connectors that are included with PowerApps. Some examples include:

- › “In the first year we saved \$500,000 in external developer costs. We expect similar savings in future years. There is no shortage of projects for these tools because people are coming up with all sorts of ideas.”
- › “We built a warehouse picker app that was one simple screen. Without PowerApps it would have cost us thousands of dollars to build. We have a lot of flexibility in testing ideas because the costs are so low.”
- › “We built an app as a POC in less than six weeks; including building some custom APIs. Most of it was done by a summer intern new to .NET and C-Sharp. He could do this because the PowerApps and Flow tools are so simple to use.”
- › “We were looking at custom development work for a corporate communications mobile app on [the two main mobile platforms]. The cost from the vendor was getting out of control. We used the Microsoft tools and completed it in one week. Otherwise, it would have taken months more. We threw away \$70,000 in previous work and saved an additional \$30,000.”
- › “We just completed another substantial project for the wind generation people. The initial savings was \$200,000 per year based on two months development for 1.5 FTEs. We anticipate an additional savings of \$1 million to \$2 million per year as it is rolled out wider.”

For the financial analysis, Forrester made the following assumptions:

- › One development project is completed using PowerApps and Flow as a proof-of-concept (POC) during the Initial period. Four more are completed by the IT organization in Year 1, and eight are undertaken by IT and business users in years 2 and 3.
- › The average development cost using traditional tools and a mix of internal and external resources was \$200,000 per project. In the initial

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than \$8.9 million.

“A recent web app we built would have cost 3x to 4x more using traditional tools. That is a good, long-term ratio for cost savings.”

Enterprise architect, power generation



period this was \$100,000 because the POC was a smaller scope. Subtracting the PowerApps and Flow development effort in the Costs section of the study provides the net benefit.

- › An ongoing cost to manage and update code equal to 20% of the development cost is also reduced.

The avoided costs can vary greatly based on the number of development projects that are completed with PowerApps and Flow as well as the scope. Costs will also vary depending on the mix of internal and external resources. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$3,504,861.

Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

Reduced IT Effort: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
A1	Number of development projects		1	4	8	8
A2	Average avoided traditional development cost		\$100,000	\$200,000	\$200,000	\$200,000
A3	Reduced development costs	A1*A2	\$100,000	\$800,000	\$1,600,000	\$1,600,000
A4	Reduced IT management and maintenance	Sum A3(through previous year)*20%		\$20,000	\$180,000	\$500,000
At	Reduced IT effort	A3+A4	\$100,000	\$820,000	\$1,780,000	\$2,100,000
	Risk adjustment	↓10%				
Atr	Reduced IT effort (risk-adjusted)		\$90,000	\$738,000	\$1,602,000	\$1,890,000

Retired Third-Party Applications

Applications built with PowerApps and Flow can replace existing, third-party applications that have license and maintenance costs. One interviewee replaced an expense reporting solution that cost \$25,000 per year. Another interviewee eliminated a solution used by 70 users that cost \$25 per user per month.

For the financial analysis, Forrester included one replaced solution beginning in Year 1, and two replaced solutions in years 2 and 3. Each solution resulted in \$25,000 annual savings.

The savings will vary depending on if the development effort replaces third-party applications versus development of bespoke functionality that would have been built in-house. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$91,454.

Retired Third-Party Applications: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
B1	Retired third-party applications			\$25,000	\$50,000	\$50,000
Bt	Retired third-party applications	=B1		\$25,000	\$50,000	\$50,000
	Risk adjustment	↓10%				
Btr	Retired third-party applications (risk-adjusted)			\$22,500	\$45,000	\$45,000

Streamlined Business Processes

Improving business processes, along with the unquantified improved business outcomes described later in this study, were the most important benefits according to the interviewees. In this section, Forrester looked at specific business improvement examples that interviewees were able to quantify. The efficiencies gained vary based on the existing business process being streamlined with PowerApps and Flow and by a user's role. Some examples of process improvements include:

- › “We reduced our time to quote from twelve days down to four. If we are really slow a couple of times, a company might stop sending us [business].”
- › “We used to have three full-time people writing reports. That's now down to one person.”
- › “We had a person driving around in one region collecting paper forms. That's gone away.”
- › “Accounting is saving three to four hours per week rekeying into our ERP system. Overall, our projects probably save one full-time clerk in the accounts payable team.”
- › “The mileage reporting app we built is used by over 150 merchandizers. That time savings alone is equivalent to 1.5 FTEs across the company.”
- › “Salespeople are saving a lot of time through better insights. Two hundred out of 400 workers are saving time because they no longer have to attach pictures to an Excel spreadsheet.”
- › “In one territory, three or four salespeople cut the time to complete surveys in half. That's 30 to 60 minutes per week.”

For the financial analysis, Forrester looked at the benefit from a general increased efficiency angle and made the following assumptions:

- › In total, 21 development projects were completed using PowerApps and Flow. Each project impacted, on average, 75 users.
- › The average time savings across all affected workers was equivalent to a 5% efficiency gain in Year 1, 10% in Year 2, and 15% in Year 3 for all affected workers.
- › An average fully burdened cost (including all taxes and benefits) for all workers across the composite organization was \$91,000.
- › Because this benefit was calculated from a productivity increase perspective, instead of an elimination of specific roles and headcount,

“We were able to reduce the number of people writing up quotes from two to one in each shop. We have twenty locations.”

*VP of IT and purchasing,
industrial equipment servicing*



it was adjusted downward by 75% because not all time savings results in additional work being completed.

The reader is encouraged to think about how streamlined business processes can reduce costs in their organization. Where possible, other improved business outcomes, which were not included in the financial analysis, should be calculated.

The benefit will vary based on how many workers are impacted, the size of the efficiency gains, and the type of workers. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of \$5,320,173.

Streamlined Business Processes: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
C1	Total number of process improvement projects	=A1 (sum through	1	5	13	21
C2	Number of affected workers	C1*75 workers	75	375	975	1,575
C3	Efficiency gain		0.0%	5.0%	10.0%	15.0%
C4	Average fully burdened cost		\$91,000	\$91,000	\$91,000	\$91,000
C5	Total efficiency gains	C2*C3*C4	\$0	\$1,706,250	\$8,872,500	\$21,498,750
C6	Productivity capture		25%	25%	25%	25%
Ct	Streamlined business processes	C5*C6	\$0	\$426,563	\$2,218,125	\$5,374,688
	Risk adjustment	↓15%				
Ctr	Streamlined business processes (risk-adjusted)		\$0	\$362,578	\$1,885,406	\$4,568,484

Unquantified Benefits

Interviewees described other business benefits that were not included in the financial analysis. This could be due to the fact that there was too great a variation, e.g., business transformation, or it was impossible to add a realistic financial value to the business benefit, e.g., increased employee satisfaction.

Improved Business Outcomes

Related to the process efficiencies benefit described above, companies shared many examples of how the business is transformed and benefits from PowerApps and Flow. Examples included:

- › “Overall service quality is getting better through standardized forms and warranty claims are down. The work we have done [with PowerApps and Flow] is a part of this. So far, warranty claims are down \$260,000 in the first five months.”
- › “We created a customer self-service portal so our salespeople can get reports faster. This resulted in better customer service and happier customers.”

“Time-to-market savings is huge, but I can’t necessarily quantify it. We’ve gone from people saying that we can’t deliver anything on time to, ‘Wow, this fast delivery time is exactly what we want.’”

Enterprise architect, power generation



- › “We are getting paid faster because reports are being generated faster.”
- › “These new apps allow us to react to critical out-of-stock events. This makes our customers happier, and they say that we care about the conditions of their stores.”

Better Decision Making

Many of the projects companies undertook with PowerApps and Flow were about collecting information from the field and sending it back to corporate. This gives managers more information and more timely access to make better and faster decisions.

- › “The tools we built helped managers understand what was going on in stores. They could pinpoint the locations and prices and explain what was going on.”
- › “We can now deliver hard metrics to end customers, which improves our relationships.”
- › “We now give managers data in new ways and at a faster rate than ever before. This saves time and money. They can take preventative actions quicker because all of the information is in a single decision support tool.”
- › “We built a tool so operators could determine, based on market conditions, if an emergency repair trip should be scheduled. We’ve gone from fulfilling one call every weekend to sometimes not doing one in an entire month.”

Increased Employee Satisfaction

Employees from different roles were reported as being happier because they felt more empowered and could work more efficiently.

- › “If you polled the mechanics, the consensus would be that they enjoy the new electronic solutions. Even some of the biggest sceptics have come around.”
- › “Being able to do this type of development work is very empowering for the IT department.”
- › “We have had very positive feedback from mobile workers because they have better access to company information.”

Additional Value Realization From Related Microsoft Solutions

Interviewees are using PowerApps and Flow to expand the capabilities within other Microsoft solutions they are using. Microsoft Dynamics and SharePoint were two that were especially called out. This means companies can get a higher ROI on previous IT investments.

- › “Office 365 has been able to leverage our work in PowerApps and Flow to drive a lot of our improvements. As a whole, our company has come a long way.”
- › “We have a fairly mature SharePoint solution. We are using PowerApps to consolidate information from a bunch of different SharePoint sites. This saves us from doing data movement and data replication.”

“We are now collecting data that we haven’t been collecting for the last twenty years of operations. We didn’t know what we didn’t know.”

*Cloud services manager,
beverage distributor*



Enhanced Application Security

PowerApps and Flow can improve security in several ways. Firstly, it uses the permissions within Active Directory to limit access to data and systems. It is also tied into the same authentication mechanisms as other Microsoft solutions. All applications built on the PowerApps Common Data Service for Apps are automatically GDPR compliant. Lastly, IT departments are using PowerApps and Flow to eliminate shadow IT and take control of managing applications developed by end users.

- › “We are leveraging these tools to take shadow IT out of the shadows.”
- › “If we did mobile apps the traditional way, we wouldn’t have been as integrated. PowerApps helps us with mobile device management (MDM).”
- › “We can do more with these apps because we have security through Azure AD.”

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement PowerApps and later realize additional uses and business opportunities.

Interviewees described how utilizing PowerApps and Flow has made their organizations more agile, allowing to see the future state possibilities for these tools. One area that the companies are moving towards is to make PowerApps and Flow more available to business users to develop their own solutions, as part of a “citizen developer movement.” None of the future opportunities were included in the financial analysis.

- › “We are still building momentum. Different teams are spearheading efforts, especially with Flow.”
- › “We are beginning to imbed PowerBI into some apps.”
- › “People use the term agile development, but when you use these tools you can quickly iterate through a lot of scenarios to get to the right solution a heck of a lot faster.”
- › “The power suite as a whole makes for a strong citizen developer model. If a user needs a simple Flow, they can easily do it.”
- › “We are looking at PowerApps and Flow for more [ERP] integrations. We will use Flow wherever it makes sense.”
- › “We will do things in PowerApps first before other alternatives where possible.”
- › “A bunch of singles really add up. There are thousands of little processes we can improve.”
- › “We have a list as long as our arm of things we want to do. There are thirty paper-based processes in our stores that can easily be fixed. A business process owner could develop those.”

“This has helped with GDPR compliance and overall better security.”

Head of CRM solutions, financial services



Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so.

“Our vision is that we will let people look at their part of the business and create their own apps; to take the load off of traditional development.”

Head of CRM solutions, financial services



Analysis Of Costs

QUANTIFIED COST DATA AS APPLIED TO THE COMPOSITE ORGANIZATION

Total Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Dtr	Development costs	\$84,000	\$420,000	\$714,000	\$630,000	\$1,848,000	\$1,529,229
Etr	Corporate IT solution and code management	\$12,600	\$77,805	\$140,805	\$266,805	\$498,015	\$400,154
	Total costs (risk-adjusted)	\$96,600	\$497,805	\$854,805	\$896,805	\$2,346,015	\$1,929,383

Development Costs

The development efforts shown here are in place of the eliminated development effort in the Benefits section of the study. Overall, interviewees said that the level of effort is very low. Most of them are using existing, non-developer IT staff to create applications with PowerApps and Flow. One interviewee reported: “There is no real cost, which is the beauty of it. We had the identity piece and most of the licenses through Office 365. I taught myself how to code with the tools using online resources.”

The change management component was also described as easy. “Change management is relatively low,” said one interviewee. “The nice thing about making a clean start with these tools is a common interface across everything. There is the same user experience across phone and laptop. We can role applications out to a broad user community without training.”

Some companies completed all development work in-house, and some used professional services. For the financial analysis, Forrester assumed a mix of internal and external costs, specifically:

- › The average internal development effort was two FTEs for three months. The average fully burdened cost was \$10,000 per month.
- › To be conservative, Forrester included professional services, and the amount varied over the years. For the POC it was lower because of the limited project scope. Year 1 projects included the most professional service, which included some custom API work and other specialized efforts. This decreased over time as development efforts were based more on the standard PowerApps and Flow toolsets.

The development costs will vary based on the number and scope of projects. Increased professional services can increase costs, but empowering business users to create their own apps can reduce costs. To account for these risks, Forrester adjusted this cost upwards by 5%, yielding a three-year risk-adjusted total PV of \$1,529,299.

The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to be a PV of more than \$1.9 million.

Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

Development Costs: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
D1	Number of projects	=A1	1	4	8	8
D2	Average development cost per project	3 months*2 FTEs *\$10,000	\$60,000	\$60,000	\$60,000	\$60,000
D3	Average professional services per project		\$20,000	\$40,000	\$25,000	\$15,000
Dt	Development costs	D1*(D2+D3)	\$80,000	\$400,000	\$680,000	\$600,000
	Risk adjustment	↑5%				
Dtr	Development costs (risk-adjusted)		\$84,000	\$420,000	\$714,000	\$630,000

Solution And Code Management

IT organizations expend effort on managing the PowerApps and Flow solutions, as well as on the code that is developed with these tools. A best practice that emerged in the interviews is that all code should be managed by the IT organization, even if it is developed by business users. The code is transferred to the IT organization and managed within a premium PowerApps account.

Managing the tools themselves was described as “less than 10% of one person’s job,” and this is reflected in the Initial period effort. The additional effort is for maintaining and further developing PowerApps and Flow code that has been handed over to corporate IT and to train users on the solutions. Total effort increases over time as more code is centrally managed and further developed, totaling two FTEs in Year 3. Fifty paid PowerApps licenses (equal mix of P1 costing \$7 per user per month and P2 costing \$40 per user per month averaging out to \$23.50) were included in the analysis for users that required premium to connectors to ERP systems.

Management costs will differ depending on: 1) the overall level of development being completed with PowerApps and Flow and 2) if a centralized IT management model is adopted. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV of \$400,154.

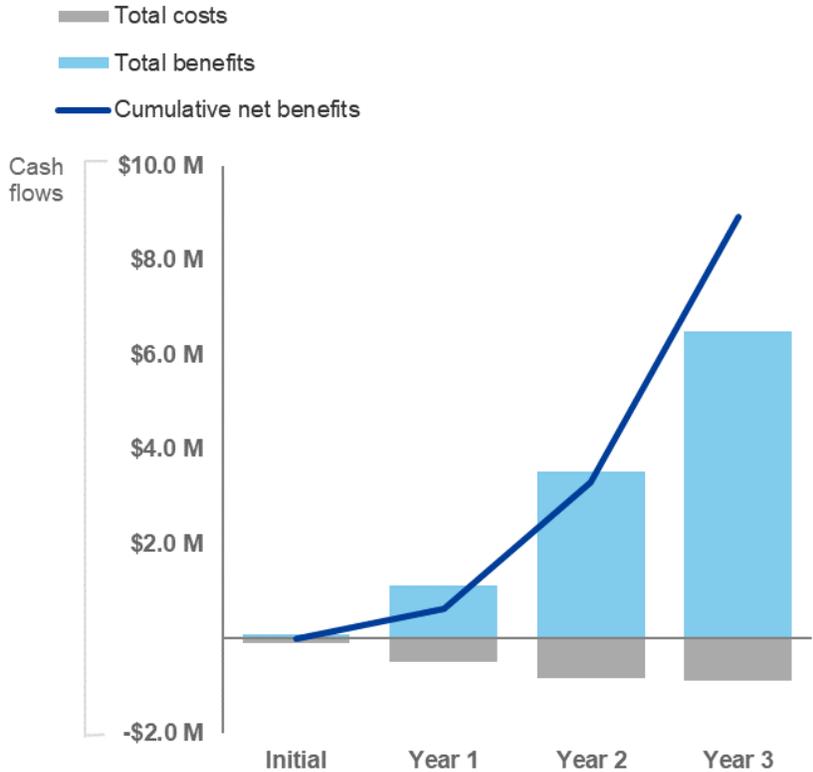
Solution And Code Management: Calculation Table

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
E1	Corporate IT code development and business user training (FTEs)		0.1	0.5	1.0	2.0
E2	Corporate IT code development and business user training costs	$E1 * \$120,000$	\$12,000	\$60,000	\$120,000	\$240,000
E3	PowerApps paid licenses (P1 & P2)	$50 * \$23.50 * 12 \text{ months}$ [beginning Year 1]	\$0	\$14,100	\$14,100	\$14,100
Et	Solution and code management	$E2 + E3$	\$12,000	\$74,100	\$134,100	\$254,100
	Risk adjustment	↑5%				
Etr	Solution and code management (risk-adjusted)		\$12,600	\$77,805	\$140,805	\$266,805

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.



These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	(\$96,600)	(\$497,805)	(\$854,805)	(\$896,805)	(\$2,346,015)	(\$1,929,383)
Total benefits	\$90,000	\$1,123,078	\$3,532,406	\$6,503,484	\$11,248,969	\$8,916,488
Net benefits	(\$6,600)	\$625,273	\$2,677,601	\$5,606,679	\$8,902,954	\$6,987,105
ROI						362%
Payback period						< 3 months

PowerApps And Microsoft Flow: Overview

The following information is provided by Microsoft. Forrester has not validated any claims and does not endorse Microsoft or its offerings.

PowerApps

Building apps with PowerApps helps everyone from business analysts to professional developers work more efficiently together. Solve business problems with intuitive visual tools that don't require code, work faster with a platform that enables data integration and distribution, and extend the platform with building blocks for professional developers. Easily build and share apps on any device.

PowerApps enables a broad range of app scenarios to be created that infuse digital transformation into manual and outdated processes. Use both canvas and model-driven apps to build PowerApps that solve business problems for task and role-specific scenarios like inspections, field sales enablement, prospect to cash, and integrated marketing views.

Use the built-in Common Data Service for Apps to store data and model processes and business logic. Take advantage of more than 200 connectors to integrate data and systems you already use. Extend PowerApps further as a professional developer with custom connectors and logic.

Microsoft Flow

Use Microsoft Flow to design logic for your PowerApps. Instead of writing code, use the point-and-click flow designer to build out your business logic. Easily run flows in your app with buttons, actions, and data inputs. These flows can fire-and-forget, or return data back to your app to display information to the user.

Keep users on track and ensure data consistency regardless of where it's entered with multi-stage business process flows. For example, you can create a flow to have everyone handle customer service requests the same way, or to require approvals before submitting an order.

Connect to your data, wherever it is, to create automated workflows that enable collaboration and productivity for your business. Seamlessly share this task automation across your team. Deep integration with SharePoint, OneDrive for Business, and Dynamics 365 provides automation right in-context of the applications you use every day.

Create more powerful flows using a simple Excel-like expression language. Connect to more systems and have additional control through built-in extensibility for pro developers. For full management, create Azure Logic Apps from your automation workflows to manage them in Azure.

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

Total Economic Impact Approach



Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.



Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.



Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.



Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



Present value (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



Net present value (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.



Return on investment (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



Discount rate

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



Payback period

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.