



OFFICE *of* INSPECTOR GENERAL
NATIONAL RAILROAD PASSENGER CORPORATION

INFORMATION TECHNOLOGY:

Better Requirements Could Help the Company Implement Technology Projects More Effectively

OIG-A-2022-007 | March 11, 2022

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Memorandum

To: Christian Zacariassen
Executive Vice President/Chief Information Officer

From: Jim Morrison *[Handwritten signature]*
Assistant Inspector General, Audits

Date: March 11, 2022

Subject: *Information Technology: Better Requirements Could Help the Company Implement Technology Projects More Effectively* (OIG-A-2022-007)

Amtrak (the company) has acknowledged the need to update several fundamental business systems while adopting new technologies, as we have reported in the past.¹ To that end, it plans to spend at least \$750 million in capital funds for its business departments' technology projects over the next five years.² The Infrastructure Investment and Jobs Act will likely increase this spending as the company identifies technology requirements for its high-priority capital projects and potentially uses eligible funding to update its systems.³ As of June 2021, the company's Information Technology department (IT)⁴ was managing 93 projects for business departments with a combined budget of \$127 million—73 percent of the company's overall technology budget for ongoing projects in fiscal year (FY) 2021. Given this level of investment, our objective was to assess the effectiveness of the company's efforts to identify the technology needs of its business departments and implement projects in response

¹ Amtrak: Top Management and Performance Challenges for Fiscal Year 2021 (OIG-SP-2021-002), October 23, 2020.

² Amtrak, FY 2021 Technology Strategy, January 2021.

³ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021). Projects eligible for funding under this act include those that aim to eliminate the backlog of the company's obsolete assets, such as systems for reservations, security, training centers, and technology.

⁴ In January 2022, the company changed the name of the IT department to the Digital Technology and Innovation department. In this report, we use "IT department" because we completed our audit work prior to this change.

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to those needs. Our scope was projects that supported the business departments and that are included in the 73 percent of the budget noted above.⁵

To understand how IT and the business departments identify technology needs, we reviewed company planning and project documents.⁶ To identify any challenges to project implementation, we selected 11 projects to review in more detail. The projects spanned six of the company's eight business departments based on their size and status.⁷ We also interviewed the IT and business department staff (21 employees) responsible for these projects. Through these interviews, we obtained information about planning processes to identify technology needs in general, coordination between IT and the business departments, and factors that hindered project implementation. Such factors included whether the project had adequately defined the project requirements that describe the features and functionality that a system or software must have to meet a department's business needs. Finally, we interviewed executive leaders and members of senior staff to obtain their insights into the business departments' technology needs and any challenges the company faces in meeting them. For more information on our scope and methodology, see Appendix A.

SUMMARY OF RESULTS

Since FY 2017, the company has implemented a process for more effectively identifying the business departments' technology projects. Nevertheless, the company can do more to systematically gather and robustly define a project's technology requirements. Almost all of the company officials we interviewed told us that poorly defined project requirements posed one of the biggest challenges affecting their technology projects. As a result, most of the 11 projects we reviewed in more detail either experienced

⁵ The other 27 percent of the company's technology capital budget supported core IT responsibilities such as cybersecurity, network redesign, and electronic data storage. Projects such as these were outside the scope of our review. Technology projects that support the company's business departments generally include projects that replace outdated systems and those that are nearing the end of their technological life (known as legacy systems); automate processes that support administrative functions, such as payroll and timekeeping (known as back-office processes); improve existing technology; and incorporate new or leading-edge technology into operations that the company did not have before.

⁶ The company's processes for assessing new and emerging technology and for developing its Annual Operating Plan were outside the scope of our review.

⁷ Our scope did not include projects from the Strategy and Planning department because we previously assessed that department's three technology projects as part of other audits. Our scope also did not include projects from the Major Program Delivery department because this is a new department the company created in May 2021 after our review was underway.

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schedule slippage that delayed the start of other projects or had cost overruns, such as the \$17.9 million in funds we identified that the company could have put to better use. We found—and company officials agreed—that project requirements were not clear or complete because of the following:

- Business department staff did not understand their responsibilities in defining requirements.
- IT and the business departments did not have sufficient or dedicated assigned staff to invest the time necessary to write and review requirements.⁸
- IT project teams did not include staff from the appropriate departments to ensure that the requirements were complete.

To improve the company's ability to implement technology projects that meet its business needs, we recommend that the Chief Information Officer (CIO)—the executive responsible for managing and funding the company's technology projects—clarify roles to ensure that staff assigned to these projects understand their responsibilities. Given the unprecedented capital improvements on the horizon, we also recommend that the CIO coordinate with the business departments to develop a process to identify and plan for the company's technology resource needs beyond the upcoming year.

In commenting on a draft of our report, the CIO agreed with our recommendations and, in response, will develop plans to clarify responsibilities for stakeholders; refine the requirements-gathering process to better identify business requirements; and coordinate the company's longer-term technology resource needs. For management's complete response, see Appendix B.

⁸ Our prior work also identified staffing shortages affecting other company programs. *Human Resources: Department Will Face Challenges Supporting Workforce Growth Plans* (Interim Audit Report OIG-A-2022-003), December 7, 2021; *Governance: Better Planning and Coordination Could Help the Company Achieve its Aggressive Timeline for ADA Compliance* (OIG-A-2021-012), September 2, 2021; *Train Operations: Acela 21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning* (OIG-A-2020-004), January 21, 2020.

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BACKGROUND

In FY 2017, the company completed Project Unity to centralize its technology projects, technical staff, and budget under IT.⁹ Previously, the business departments independently managed their own technology projects. As part of this centralization effort, IT assigned each of the business departments at least one IT liaison to help identify their technology needs and implement associated projects. The company refers to these liaisons as service owners who support the business departments. The company also reduced the number of technology projects across the company so IT could more effectively manage the projects with its available staff. We reported then that this centralization would require departments to develop effective partnerships with IT to ensure that the company's technology projects met established goals and requirements.¹⁰ Figure 1 shows the departments as of November 2021.

Figure 1. Company Departments as of November 2021



Source: OIG analysis of company organizational chart

Over the last four years, the company implemented changes to operationalize Project Unity and introduced a new organizational model within IT to focus on business partnerships and increased accountability.¹¹ These included IT staff working more closely with business department leadership to identify and prioritize their technology needs, which the executive leadership team uses to select and allocate funding for projects for the next fiscal year as part of the company's Annual Operating Plan. As an

⁹ Such an enterprise-wide approach is a leading practice that provides the ability to manage risk and deliver capabilities to an organization. In the past, the company used a stove-piped department-level approach, resulting in duplication and increased costs on certain programs. *Information Technology: Operations Foundation Program—Restructuring Could Help Control Costs and Limit Risks* (OIG-A-2017-011), June 19, 2017.

¹⁰ *Amtrak: Top Management and Performance Challenges—Fiscal Years 2017 and 2018* (OIG-SP-2017-009), March 29, 2017.

¹¹ The company refers to this as the Service Oriented Organizational model.

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input into this plan, IT works with each business department to prepare a department-level plan called a business technology roadmap that identifies the applications, systems, or technology tools each department wants to obtain in the next year to improve its operations. Company officials identified the following benefits to this approach:

- It helped organize business departments' requests for technology projects and enabled IT to see across the departments to ensure that projects were not duplicative.
- It was more effective at ensuring that annual funding goes to technology projects that will improve operations and align with business priorities.
- It kept business departments from submitting "wish lists" of projects with no priorities or clear links that demonstrate how they would improve a business process.
- It gave the company more flexibility to adjust for unanticipated factors that can affect priorities, such as the pandemic, which drastically affected train operations and revenues in 2020.

Once the executive leaders decide on the projects to fund,¹² options to implement them include purchasing and customizing commercial, off-the-shelf solutions; developing solutions in-house; and using vendors to build technology for the company.

In January 2022, the company established a new Research and Development and Innovation function within IT. One of its goals is to identify innovative solutions to address the company's business needs.

IT manages the implementation of technology projects in support of company operations, and the relevant business departments provide staff to support them as needed. To help guide its project management, IT established a process with key steps, including the following: (1) developing project requirements, discussed below, prior to designing a solution to address a business need, and (2) ensuring that the project manager establishes the project's goals and identifies the staff from IT and the business departments to provide input on the design and functionality of the project.

Project requirements define what the department wants to be able to do once the technology project is completed and describe how the software or system will satisfy

¹² Funding decisions are made under a process detailed in Amtrak policy 8.37.

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those business needs. Making sure that IT and the business departments fully understand the aims of a technology project and how the project will address them are key components to a project's success. This understanding sets the foundation for a project's vision, scope, cost, and schedule and helps ensure that the proposed project will meet the departments' needs.

COMPANY IMPROVED IDENTIFICATION OF TECHNOLOGY NEEDS, BUT POOR REQUIREMENTS IMPEDE PROJECT IMPLEMENTATION

Since FY 2017, the company developed and implemented a more disciplined process to identify the business departments' technology needs as part of its annual planning. This has resulted in a more deliberate, enterprise-wide plan of projects for the next fiscal year. Company officials we interviewed told us coordinating and identifying technology needs in this way has been more effective in prioritizing and ensuring that annual funding goes to projects that meet the company's strategic goals. However, one of the biggest challenges that almost all of the IT and business department staff and a few executive leaders we interviewed identified was that poor project requirements hindered company efforts to implement approved technology projects. Company standards call for project requirements that are clear and complete before soliciting vendors to deliver a solution. Addressing this area could improve the company's effectiveness in implementing technology projects by helping IT deliver them on time and within budget.

Specifically, 8 of the 11 projects we reviewed did not have clear or complete requirements. Of those eight projects, seven experienced schedule delays, and four had cost overruns. For example, on four projects—Revenue Accounting, Food and Beverage Point of Sale, Ariba on Demand, and Passport¹³—the company spent \$16.4 million more than it initially budgeted on change requests through February 2021 to address new requirements or expanded scopes on the projects because it did not have clear or complete initial requirements. Further, the resulting delays on the Revenue Accounting project contributed to delays on the related Food and Beverage Point of Sale system,

¹³ The Revenue Accounting project aimed to standardize the company's revenue transactions and offer real-time reporting. The Food and Beverage Point of Sale project aimed to update and automate the onboard sales technology. The Ariba on Demand project aimed to modernize the company's legacy procurement system. The Passport project aimed to modernize the Law department's claims and invoicing systems.

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costing an additional \$1.5 million over budget.¹⁴ Improving the processes to better gather and define clear and complete requirements could have helped the company avoid this \$17.9 million in cost overruns, and it could have put these funds to better use.

THREE FACTORS CONTRIBUTED TO UNCLEAR OR INCOMPLETE REQUIREMENTS

We found, and company officials agreed, that requirements for the projects described above were unclear and incomplete for one or more of the three following reasons.

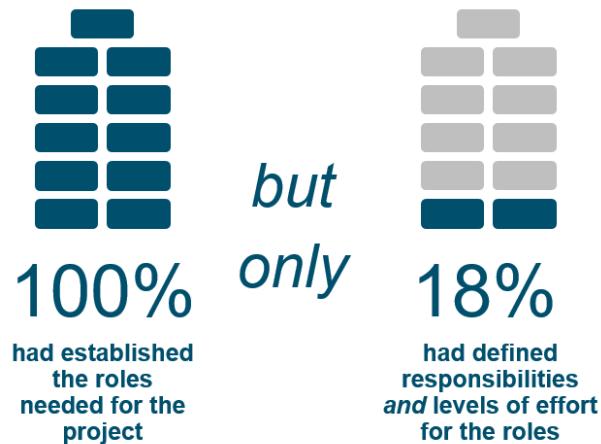
Business Department Staff Did Not Understand Their Responsibilities

Senior IT officials we interviewed told us better guidance and training about roles and responsibilities would help business department staff understand what IT needs to facilitate the implementation of technology projects. Several business staff who had established roles with the technology projects we reviewed told us they were uncertain about their responsibilities in working with IT to clearly define project requirements. For those 11 projects, IT project teams did not consistently define clear project responsibilities and level of effort. For example, the project charters for all 11 projects identified roles, but only 2 charters identified both the specific responsibilities and level of effort for those roles, as Figure 2 shows.

¹⁴ The company started a project to automate the Marketing department's Food and Beverage Point of Sale system, which was dependent on the completion of the Finance department's Revenue Accounting project. When the Finance project was delayed, the Food and Beverage team had to develop and implement unplanned enhancements to the new system to keep it compatible with the older Revenue Accounting system.

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Figure 2. Analysis of the Project Charters for 11 Technology Projects



Source: OIG analysis of 11 project charters

In addition to not having clearly defined responsibilities in the charters, business department staff from four of the six departments we reviewed told us responsibilities were not always clear between their department and the IT department. They also told us that IT had not effectively communicated the business staff's responsibilities and necessary levels of effort. For example, IT's lessons learned document on the Ariba on Demand project, which IT completed in line with company standards, identified several problems during project implementation that ultimately led to increased costs and delays for this project. These included incomplete requirements that resulted in additional work after the company deployed the system, a lack of understanding of how the solution would affect business processes, and confusion from not clearly identifying the responsibilities for business department staff and vendors. In fact, four of the five lessons learned documents we reviewed identified unclear roles and responsibilities as a factor that negatively affected a project.

Some IT service owners told us they provide informal guidance and training to business department staff at the outset of projects they manage but not for all staff who join the team after a project is underway. This training did not include what business staff would need to do to help IT write clear and complete requirements. A senior IT official agreed that additional training is needed for IT and business department staff to make sure the IT project teams know how to write requirements. As a result, several business department staff we interviewed told us they were not certain what IT needed them to

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do, such as assessing departmental processes and identifying requirements for how technology projects can improve them.

Most business and IT staff we interviewed also told us of other areas where the responsibilities between IT and the business departments were unclear, including the following:

- **Planning for how emerging technologies could be used to improve operations.** Several officials we interviewed were not consistently clear on who was responsible for researching emerging technology and understanding how it could apply to operations. For example, when we asked executive leaders which department was responsible for identifying and planning for new technology, four responded that it was the business departments' responsibility while the other two said it was IT's, with input from business departments.
- **Including IT on projects.** The business staff we interviewed had inconsistent understanding about when to involve IT on a project. They told us they either involve IT from the beginning, or they take the lead in identifying the solution and then bring in IT. As a result, both IT and business department staff told us about instances when business departments purchased software or tried to develop a technology solution without consulting IT—a situation company officials told us has improved since Project Unity but still sometimes occurs throughout the company.¹⁵ Most of the IT service owners we interviewed provided at least one example in which the business department they supported did not involve IT early enough on a project that resulted in rework from IT once it became aware of the project.
- **Training employees on using new systems.** Several business and IT staff also told us that unclear responsibilities for training employees on how to use a new system—a process called organizational change management—further hindered project implementation. Four of the 11 projects we reviewed did not have processes to successfully train staff to use the new technology. In one case, we found that business staff did not understand how the new technology would affect their

¹⁵ Our prior audits of complex projects found that the responsible business departments did not engage IT as a stakeholder early enough in the project. *Governance: More Effective Planning and Coordination of Track Outages Would Help Achieve a State of Good Repair* (OIG-A-2020-016), September 14, 2020; *Governance: Early Planning and Oversight Deficiencies Led to Initial Program Failures and Continued Risks to the Moynihan Train Hall Program* (OIG-A-2020-014), August 17, 2020.

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business processes until after the vendor fully implemented it and they tried to use it in real-time.

Clarifying IT's and the departments' responsibilities could help the company more effectively implement technology projects and avoid spending funds like those we identified that it could have put to better use elsewhere.

Projects Did Not Have Sufficient IT and Business Department Staff

Some project requirements were not clear or complete because the company did not resource projects with sufficient IT staff, business staff, or both. IT conducts an annual resource assessment by project to determine the type of staff that each project will need. This assessment, however, focuses only on the immediate projects the company is planning for the next year and does not extend to longer-term project needs that IT and the business departments may have. IT and the business departments do not have a process to coordinate the company's longer-term technology resource needs, including where such resources should reside and when they are needed.

The CIO acknowledged that IT has staffing shortages but noted that filling them would not be enough to prepare the company to support the technology projects it anticipates in the coming years. The CIO said that the business departments would also need to have the requisite staff and skills, such as business analysts, to support the projects. Executive leaders and the CIO acknowledged that the technical staff capacity of IT has to match that of the business departments to effectively implement projects. To that end, some business departments have begun to hire related staff (including business analysts), but they are doing so independently from IT. A process to coordinate staffing needs would help the company avoid scaling up such resources within the business departments without a commensurate increase in support from IT.

Some executives told us, however, that it takes time to build their departments' staff. Compounding this challenge is the difficulty all organizations currently face to hire and retain technical talent in a highly competitive IT marketplace. Adding to this difficulty, we recently reported that the Human Resources department is not sufficiently staffed to recruit and onboard new staff, which may further complicate the departments' ability to add qualified technology professionals.¹⁶ Given that the company is forecasting an increase in technology investment in the next five years, a coordinated assessment

¹⁶ *Human Resources: Department Will Face Challenges Supporting Workforce Growth Plans* (Interim Audit Report OIG-A-2022-003), December 7, 2021.

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process that looks beyond the upcoming year would help ensure that future projects have the staff they need. Such an assessment would allow the company to compare the needs of future projects with current staff resources to identify where staff needs are, where they should reside, and when the positions should be filled to support future projects.

Accordingly, the company did not ensure that IT and the business departments had sufficient staff capacity to support the projects we reviewed, as described below.

- **IT staff.** The majority of executive officials told us the limited availability of IT staff negatively affected their technology projects. Of the 21 IT and business staff we interviewed, 16 told us IT did not have enough staff, or the staff they provided could not fully dedicate their time to individual projects. Business department staff told us the IT staff assigned to their projects often had competing responsibilities for multiple projects. For example, the IT staff assigned to the Timekeeping project—an effort to consolidate six separate timekeeping systems across the company—were also assigned to other large projects that also spanned multiple departments. As a result, IT staff were not always available at important points in the project and did not fully understand the business processes the project needed to address. In the past, IT augmented its staff with contractors to fill key roles on its projects. The CIO and his senior staff said, however, that IT cannot solely rely on contractors but must also build its internal capacity.
- **Business department staff.** The CIO and six executive leaders we interviewed also acknowledged that the company needs to hire more business analysts with the requisite skills to help identify technology needs and translate those needs into detailed project requirements. Staff from only two of the six departments identified business analysts in their departments with the skills to understand the business processes and technology well enough to identify project requirements and anticipate the solutions needed to support them. Staff in these two departments told us their business analysts, whom the business departments dedicated to support their technology efforts, helped articulate the department's needs to IT and ensure that the department's interests were represented. In other business departments, we found that the staff assigned to a project had competing priorities—balancing other projects or their daily duties. Although business staff may not always be able to be fully dedicated to a project, IT staff told us that without such dedicated personnel, the business departments did not consistently articulate their needs, which resulted in projects not having clear and complete requirements.

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Project Teams Did Not Include the Appropriate Departments

Some project requirements were incomplete because IT project teams did not include staff from the appropriate business departments to ensure that the requirements included all their needs. For Ariba on Demand—a project to modernize the company's legacy procurement system—the project team included only Finance and Procurement staff in the initial process for gathering requirements and selecting a vendor. In 2018, eight months into the project, the project team determined that multiple other departments, including Marketing and Operations, also used the legacy procurement system and would also have requirements for the new system. Incorporating these departments' requirements after IT had moved forward with the initial requirements meant IT had to make unplanned changes to the system, contributing to cost overruns and delays of more than a year.

This occurred because the IT service owner and the assigned business staff did not fully understand the business processes the system would replace in order to identify what departments should be involved. Since then, IT acknowledged that this was a problem and instituted additional controls in its project management process to prevent this from happening in the future. These controls include project kickoff meetings to identify affected departments and more robust stakeholder approvals before a project can advance. Given these additional controls, we are not making a recommendation in this area.

CONCLUSION

With an anticipated increase in IT investments and concurrent expansion of capital projects associated with the Infrastructure Investment and Jobs Act, the company has an opportunity to further improve its processes for developing its technology requirements. In the near term, clarifying roles and responsibilities for IT and business department personnel and ensuring efficient project staffing would likely contribute to the avoidance of project delays and spending funds it could put to better use.

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RECOMMENDATIONS

To improve the effectiveness of implementing technology projects, we recommend that the Executive Vice President/Chief Information Officer, in coordination with the company's other executive leaders, take the following actions:

1. Clarify and implement IT's and the departments' responsibilities for technology projects, including ensuring that IT project teams know how to identify and write requirements and that staff assigned to do so understand their responsibilities.
2. Develop and implement a process to coordinate the company's longer-term technology resource needs, including where such resources should reside and when they are needed.

MANAGEMENT COMMENTS AND OIG ANALYSIS

In commenting on a draft of this report, the company's CIO agreed with our recommendations and identified actions the company plans to take in response, which we summarize below.

- **Recommendation 1:** Management agreed with our recommendation to clarify and implement IT's and the departments' responsibilities for technology projects. The company will develop a plan to enhance existing processes to clarify and implement responsibilities related to requirements and other areas, and improve processes to better identify, articulate, and document business requirements. The target completion date is December 30, 2022.
- **Recommendation 2:** Management agreed with our recommendation to develop and implement a process to coordinate the company's longer-term technology resource needs. IT, in partnership with the business departments, will create a plan to develop and implement such a process. The target completion date is February 28, 2023.

As we monitor the company's efforts to address our recommendations, we will review the plans the company describes in its management response and assess whether the company is making solid progress in implementing them. For management's complete response, see Appendix B. Management also provided technical comments that we have incorporated in this report as appropriate.

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APPENDIX A

Objective, Scope, and Methodology

This report provides the results of our audit of the company's technology planning and implementation. Our objective was to assess the effectiveness of the company's efforts to identify the technology needs of its business departments and implement projects in response to those needs. Our scope included reviewing 11 ongoing and completed projects that supported the business departments and are included in the company's IT capital budget. The company's processes for assessing new and emerging technology, and for developing its Annual Operating Plan, were outside the audit's scope. We performed our audit work from July 2020 through November 2021.

To assess the effectiveness of the company's efforts to identify and implement its technology needs, we completed the following actions:

- Selected 11 technology projects from 6 of the 8 business departments—Finance, Human Resources, Law, Marketing, Safety, and Operations—to assess project planning and implementation. For this, we developed a non-probability sample based on department, project size, and project status. The results of our review pertaining to our sample cannot be projected to all technology projects across the company. We limited our findings to the projects identified as noted in the report. For the 11 projects we selected, see Figure 3.

Figure 3. OIG Selection of 11 Technology Projects

Technology Projects	Business Department
Enterprise Timekeeping Solution	Finance
Revenue Accounting	Finance
Migration of Ariba to Cloud Enabled Solution	Finance
Case Management System	Human Resources
Self-Serve Kiosk Replacements	Marketing
Food & Beverage Next Gen Point of Sale	Marketing
Customer Data Hub	Marketing
Unified Matter Management System (Passport)	Law
Enterprise Asset Management	Operations
Product Life Cycle Management Solution	Operations
Police Motorola Radio Purchases	Safety

Source: OIG selection of technology projects

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- Interviewed 12 business department staff and 9 corresponding IT service owners responsible for the 11 projects. For these interviews, we developed a questionnaire to obtain insights on the technology planning process in general, coordination between IT and the business departments, and challenges that affected project implementation. We used the questionnaire to ask about factors affecting project implementation. Such factors included whether the project had adequately defined the project requirements that describe the features and functionality a system or software must have to meet a department's business needs. We pre-tested the interview questions and questionnaires with staff from OIG and several company departments.
- Interviewed executive leaders and program officials from IT and the business departments to gain a strategic perspective of the departments' technology needs and the challenges the company faces to meet them.
- Compared the information we obtained from interviews and company documents to company and industry standards for planning, program management, and management controls. We assessed the results from the interviews and questionnaires to identify themes on the company's effectiveness in identifying and implementing technology projects.
- Analyzed the results of our interviews to identify key factors that hindered effective project planning and implementation.
- Reviewed company documents, including planning documents, monthly project status reports, and project documents for the 11 projects. To calculate funds the company could have put to better use, we reviewed the change requests resulting from poorly defined requirements and planning to determine associated budget impacts, if any.

In total, we interviewed 56 company employees for this audit from October 2020 through September 2021.

We conducted this performance audit in accordance with generally accepted governmental auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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Internal Controls

We reviewed the internal controls the company had in place for identifying and implementing its technology projects. Specifically, we assessed the internal control components and underlying principles and determined that the following three of the internal control areas were significant to our audit objective:

- **Control environment.** Management should establish an organizational structure, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives.
- **Control activities.** Management should develop and implement activities through policies and procedures to ensure that the company achieves its objectives.
- **Information and communication.** Management should provide quality information to achieve the entity's objectives.

We developed audit work to ensure that we reviewed each of these control areas, including assessing the following:

- program management controls for establishing clear roles and responsibilities for IT and business department staff
- policies and procedures to identify and implement the technology needs of the business departments
- the quality and completeness of project planning documents and activities to achieve effective technology project implementation

Because our review was limited to these internal control components and underlying principles, it may not have disclosed all of the internal control deficiencies that may have existed at the time of this audit.

Computer-processed Data

Our findings did not rely on computer-generated data from any company information systems.

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Prior Reports

In conducting our analysis, we reviewed and used information from the following OIG reports:

- *Human Resources: Department Will Face Challenges Supporting Workforce Growth Plans* (Interim Audit Report OIG-A-2022-003), December 7, 2021
- *Governance: Better Planning and Coordination Could Help the Company Achieve its Aggressive Timeline for ADA Compliance* (OIG-A-2021-012), September 2, 2021
- *Top Management and Performance Challenges for Fiscal Year 2021* (OIG-SP-2021-002), October 23, 2020
- *Governance: More Effective Planning and Coordination of Track Outages Would Help Achieve a State of Good Repair* (OIG-A-2020-016), September 14, 2020
- *Governance: Early Planning and Oversight Deficiencies Led to Initial Program Failures and Continued Risks to the Moynihan Train Hall Program* (OIG-A-2020-014), August 17, 2020
- *Train Operations: Acela 21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning* (OIG-A-2020-004), January 21, 2020
- *Information Technology: Improving Cybersecurity and Resiliency of Train Control Systems Could Reduce Vulnerabilities* (OIG-A-2019-008), July 9, 2019
- *Information Technology: Operations Foundation Program—Restructuring Could Help Control Costs and Limit Risks* (OIG-A-2017-011), June 19, 2017
- *Amtrak: Top Management and Performance Challenges—Fiscal Years 2017 and 2018* (OIG-SP-2017-009), March 29, 2017
- *Acquisition and Procurement: Master Services Agreements Are Not Strategically Managed, and Award and Oversight Processes Can Be Improved* (OIG-A-2017-006), February 22, 2017
- *Information Technology: Reservation System Infrastructure Updated, but Future System Sustainability Remains an Issue* (OIG-A-2015-010), May 19, 2015

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APPENDIX B

Management Comments

<p style="font-size: 1.5em; font-weight: bold; margin: 0;">Memo</p> <p style="margin-top: 10px; margin-bottom: 0;">NATIONAL RAILROAD PASSENGER CORPORATION</p>	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="flex: 1;"> <p>Date: February 28, 2022</p> <p>To: Jim Morrison, Assistant Inspector General, Audits</p> </div> <div style="flex: 1; text-align: right;">   Christian Zacariassen Christian Zacariassen, EVP Digital Technology & Innovation </div> </div> <p style="margin-top: 10px;">From:</p> <p>Department: Digital Technology & Innovation</p> <p>Cc:</p> <p>Stephen Gardner, CEO & President Tracie Winbigler, EVP CFO Eleanor Acheson, EVP General Counsel Steven Predmore, EVP CSO Qiana Spain, EVP CHRO Dennis Newman, EVP Strategy & Planning Laura Mason, EVP Capital Delivery Roger Harris, EVP Marketing & Revenue Scot Naparstek, EVP Service Delivery & Operations Judith Apshago, VP IT Corporate & Operations Technology Aaron Mitti, VP CTO Jesse Whaley, VP CISO Bob Hutchison, VP IT Technology Operations Sunil Tewari, AVP IT Customer Services & Revenue Systems Kevin Connelly, Sr. Director IT Business Services Mark Richards, Sr. Director Amtrak Risk & Controls</p> <p>Subject: Management Response to <i>INFORMATION TECHNOLOGY: Better Requirements Could Help the Company Implement Technology Projects More Effectively</i> (Draft Audit Report for Project No. 013-2020)</p> <p>This memorandum provides Amtrak's response to the draft audit report titled, "<i>INFORMATION TECHNOLOGY: Better Requirements Could Help the Company Implement Technology Projects More Effectively</i>." Management appreciates the opportunity to respond to the OIG's recommendations. As indicated in our responses, we agree with each of the OIG recommendations and will initiate actions to address each in a timely manner.</p> <p>To improve the effectiveness of implementing technology projects, we recommend that the Executive Vice President/Chief Information Officer, in coordination with the company's other executive leaders, take the following actions:</p>	

Amtrak Office of Inspector General
**Information Technology: Better Requirements Could Help the Company Implement
Technology Projects More Effectively**
OIG-A-2022-007, March 11, 2022

NATIONAL RAILROAD PASSENGER CORPORATION

Recommendation 1:

Clarify and implement IT's and the departments' responsibilities for technology projects, including ensuring that IT project teams know how to identify and write requirements and that staff assigned to do so understand their responsibilities.

Management Response/Action Plan: Management agrees with the OIG recommendation to clarify responsibilities and improve requirements definition and documentation capabilities. To achieve these goals, we will develop a plan to:

- Enhance existing processes to clarify and drive consensus of roles and responsibilities across business and IT stakeholders related to requirements, organizational change management, and other key technology project activities.
- Refine the requirements gathering processes for technology implementations to better identify, articulate, and document business requirements.

Responsible Amtrak Official(s): Kevin Connelly, Senior Director, Digital Technology Business Services

Target Completion Date: December 30, 2022

Recommendation 2:

Develop and implement a process to coordinate the company's longer-term technology resource needs, including where such resources should reside and when they are needed.

Management Response/Action Plan: Management agrees with the OIG recommendation. In partnership with the business, IT will create an overall plan to develop and implement a process to coordinate the company's longer-term technology resource needs.

Responsible Amtrak Official(s): Kevin Connelly, Senior Director, Digital Technology Business Services

Target Completion Date: February 28, 2023

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APPENDIX C

Abbreviations

CIO	Chief Information Officer
FY	fiscal year
IT	Information Technology department
OIG	Amtrak Office of Inspector General
the company	Amtrak

Amtrak Office of Inspector General
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APPENDIX D

OIG Team Members

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Anne Keenaghan, Senior Director, Audits

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OIG MISSION AND CONTACT INFORMATION

Mission

The Amtrak OIG's mission is to provide independent, objective oversight of Amtrak's programs and operations through audits and investigations focused on recommending improvements to Amtrak's economy, efficiency, and effectiveness; preventing and detecting fraud, waste, and abuse; and providing Congress, Amtrak management, and Amtrak's Board of Directors with timely information about problems and deficiencies relating to Amtrak's programs and operations.

Obtaining Copies of Reports and Testimony
Available at our website www.amtrakoig.gov

Reporting Fraud, Waste, and Abuse

Report suspicious or illegal activities to the OIG Hotline

www.amtrakoig.gov/hotline

or

800-468-5469

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