Creating an immigration workflow management solution with Dynamics 365

At Microsoft, people are our most important asset, and we attract talent from all over the world. Complex immigration and international travel issues are part and parcel of building a diverse, global workforce.

In Core Services Engineering (CSE, formerly Microsoft IT), we used Microsoft Dynamics 365 to create an innovative workflow management solution for the US Immigration team within the Microsoft Corporate, External, and Legal Affairs (CELA) group. CELA US Immigration manages immigration and international travel issues on behalf of visa-dependent employees, university candidates, employment candidates, and their legal dependents.

The solution is called Microsoft Immigration Management System (MIMS). It was largely created with out-of-box and configurable Dynamics 365 features—along with some customizations. MIMS captures almost all of the immigration business process flows, integrates with a dozen internal and external partner groups, and helps the immigration team optimize its processes. Perhaps most importantly, MIMS helps visa-dependent employees at Microsoft—more than 15,000 employees and their dependents—spend more time working on their important strategic projects and less time worrying about stressful, labor-intensive immigration issues.

MIMS manages immigration complexity

CELA US Immigration manages a wide variety of complex immigration issues on behalf of visa-dependent employees and their families who need a visa endorsement that is issued by the United States government. A visa endorsement permits a non-US passport holder to enter, travel through, or reside in the country for a specified amount of time. The immigration team works with multiple internal and external partners to process employee cases, such as applying for H1-B work permits.

The immigration team was using a third-party Software as a Service (SaaS) immigration case management solution, but escalating performance issues made it clear that it couldn’t scale to meet the growing needs of Microsoft. We responded quickly—prototyping and then rolling out MIMS into production. MIMS streamlines and standardizes up to 60 unique immigration case management workflows.

MIMS is a giant leap forward in functionality. It automatically creates and populates some documents as soon as a case is created. It provides an intuitive at-a-glance, holistic view of case status, ownership, and current action items—and it smartly manages documents and reuses information.

CELA US Immigration and its twelve internal and external partners, each with their own unique workflow, billing, and reporting requirements, now seamlessly integrate into a single sign-on, unified tool. MIMS manages work queues and work ownership from beginning to end—starting from the moment a case is automatically assigned. At every stage of a case, MIMS captures and audits time spent on tasks and tracks service level agreements (SLAs). This data helps the immigration team hold legal partners and managed contractors accountable, and optimizes processes.

It’s worth noting that in early 2017—while developing MIMS—CELA US Immigration was asked to intervene on behalf of employees during the US travel ban. Thousands of visa-dependent employees were overwhelmed by a fluid, stressful, and confusing situation, and the immigration team was challenged to keep up with the flood of emails. CELA US Immigration needed an effective way to triage the situation, so we used Dynamics 365 to quickly create an employee engagement portal. With the portal, we were able to automate and standardize responses, prioritize cases, and respond to critical cases that required the most attention. This functionality was rolled into MIMS.

Dynamics 365 meets the challenge

When the old immigration case management solution started experiencing serious performance issues, we knew it was time to find alternatives. The system was inflexible and couldn’t accommodate the workflows that CELA US Immigration needed, and the interface was dated and difficult to use. Because it was a SaaS solution, we couldn’t customize it in any significant way.

The CELA US Immigration leadership team asked us to evaluate alternative third-party solutions and consider the option to build our own. We determined that workflows in the Dynamics 365 platform would support the immigration case management process. Within two weeks, we used out-of-box Dynamics 365 features to prototype and demonstrate a workflow solution for an H1-B work permit case.
Stakeholders had serious concerns about making the US government forms work within the platform. United States Citizenship and Immigration Services (USCIS)-specific forms are precisely formatted and barcoded. Any form deviation can seriously disrupt immigration processes, force people to re-file, and sometimes even cause case rejection. The forms workflow was not an out-of-box Dynamics 365 solution. However, in just two more weeks, we used XRM extensibility in Dynamics 365 to create a working forms demonstration. From there, we moved forward with scoping, designing, and building the production MIMS solution.

There were some customizations, of course, but we largely configured the Dynamics 365 case management module to conform with the specific business process workflow for every immigration case type, such as H1, L1, green card, and permanent residency. For example, an H1-B case has five processes. If an attorney creates a new H1-B case in MIMS, the workflow immediately triggers all five processes. MIMS shows what is expected for each process and provides live progress updates.

**Workflow provides complete visibility**

In the past, Microsoft employees had to work hard to track their own immigration cases. Nothing was automated or intuitive. The MIMS stage-based approach shows all parties—immigration specialists, attorneys, program managers, and outside vendor partners—where the case is in its process, who owns the current process stage, and how long it’s taking. CELA US Immigration has clear visibility to better manage the process.

As a case moves along, it moves into the queue for a particular owner. CELA US Immigration partners can see all the work in their queues at one time. Queues help the immigration team serve up work efficiently because partners don’t have to search for the cases they’re currently working on. Specific tasks can be assigned to an individual, with due dates and priorities. It’s an efficient way to show what needs to be worked on, today. Specific MIMS views—such as all approved cases or all active cases—can be configured and created, and then shared by administrators with an individual or a team. It’s an easy and reliable way to see information. Table 1 outlines the different functions that MIMS supports. Each is an improvement on our old system, which was inflexible and disjointed.

**Table 1. MIMS improvements**

<table>
<thead>
<tr>
<th>Function</th>
<th>In MIMS</th>
<th>In old system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active case dashboard</td>
<td>Shows current stage, next stage, SLA remaining, current owner, and so on.</td>
<td>Status managed through offline spreadsheets and manual SLAs.</td>
</tr>
<tr>
<td>Forms management</td>
<td>New case auto-generates all associated forms, with pre-populated data.</td>
<td>Data population was limited to a single form.</td>
</tr>
<tr>
<td>Document management</td>
<td>Documents are securely uploaded into MIMS, categorized, reused.</td>
<td>Required two tools; email files and data did not flow to other related processes.</td>
</tr>
<tr>
<td>Activity history</td>
<td>Detailed history of case-related emails, phone calls, and so on.</td>
<td>Managed through offline Excel spreadsheets.</td>
</tr>
<tr>
<td>Employee portal</td>
<td>Portal provides current case view, pending tasks, alerts, and legal dependent-related activities.</td>
<td>No way to easily see case updates.</td>
</tr>
</tbody>
</table>
Holistic case views

In MIMS, a central dashboard provides a holistic, at-a-glance view of active cases. Users immediately see the current case stage, what the next stage is, who the current owner is, the remaining time on the current SLA, the SLA end date, who created the case, and when. The dashboard can be filtered by any field. An owner can be an individual or a company (a law firm, for example). In the old system, CELA US Immigration had to track work on a case-by-case basis in an offline Excel spreadsheet, which was often out of date. SLAs were not systematically tracked and had to be manually calculated.

A MIMS case is initiated by a questionnaire that is sent to an employee, and from there, documents are drafted. The case progresses through defined stages, like legal review, filing, case receipt (waiting to come back from government), RFE (Request for Evidence) received, case decision, and closure. Figure 1 shows that users can visually walk through a case, see current ownership, and watch overall progress.

Figure 1. A MIMS case dashboard

The immigration team and its partners always know where a case is in the process and what should happen next. In the old system, there was no quick and easy visual—users couldn’t see a case progress from stage to stage. MIMS case stages are flagged as either required or optional. All steps within a required stage must be completed before moving to the next stage. This is an important new checks and balances function for CELA US Immigration. It produces an audit trail and identifies contacts to go back to for more information or clarification.

Efficient forms management

In immigration cases, forms are numerous and extremely important. For example, in an L1-B case, five forms (G-28, I-129, I-129L, I-129S, and I-907) must be filed along with a petition. In MIMS, the L1-B case is created along with the associated forms, which are auto-populated with employee data. If the immigration team opens another case on the same person’s behalf, MIMS populates common data from case to case. It reduces effort for the employee as well as internal and external legal partners. In the old system, data pre-population was extremely limited and did not carry forward from case to case.

Smart document re-use and categorization

Immigration cases typically require copies of important documents like passports, birth certificates, and marriage certificates. Because Microsoft processes immigration cases on behalf of employees and their legal dependents, documents are required for all parties. Documents are uploaded securely and directly into the MIMS system through an employee portal. Everything is in one place and documents can be reused. MIMS remembers, for example, if an employee has already uploaded a passport.

Documents are categorized and validated upon upload. For example, if an employee uploads a visa instead of a passport, the error is immediately flagged upon review by a legal partner. MIMS alerts the employee, and they can upload the correct document. The workflow eliminates a lot of unnecessary back and forth email communication.

In the old system, document management suffered. Files were frequently emailed from person to person, which could be unreliable and difficult to manage. A dedicated third-party document management system meant that CELA US Immigration and partners had to work out of two different tools, which sometimes caused confusion. Also, documents were independent within a particular case, and didn’t apply to other cases.

Many documents are time-sensitive. MIMS takes guesswork away by creating notifications and workflows for document renewal.
Comprehensive history tracking
MIMS tracks the history of action and communication that happens on a case. It shows email and phone call history and can show all activities for a particular case or all activities for an employee. In the old system, activities were tracked through offline Excel spreadsheets.

Engaging employee portal
We used portal capabilities in Dynamics 365 to design and enhance the MIMS experience for employees and potential candidates. In the old system, there was simply no easy way for employees and candidates to see the latest updates on their immigration case or their legal dependents’ cases. Now, users can log in and immediately see alerts, outstanding tasks that require action, and other notifications. For example, they might see a request to provide an updated visa. Employees can also interact with the portal on behalf of their spouse and children.

Faster and more efficient processes
Time and effort associated with immigration processes have improved dramatically. Here are some quick examples:

- **Candidate recruitment data** now instantaneously flows from college and industry HR partners to CELA US immigration. It used to take 36 hours to port data over, analyze it, and confirm that there were no immigration issues prohibiting these candidates from working.
- **Daily reports** are pinned to the MIMS dashboard for quick processing. It used to take multiple Excel spreadsheets to track status.
- **Queue assignments and an SLA clock** clearly show ownership and how much time each stage or process is taking. The immigration team used to manually track the performance and progress of outside legal partners through an Excel-based report.
- **Data is reused efficiently**, and our employees just have to keep it updated. This saves lots of time and effort and improves accuracy. In the past, employees had to answer the same questions again and again when a new case was created.

Deep integrations
We used Dynamics 365 APIs, available in the Dynamics 365 SDK, to create deep integrations in MIMS. It helps CELA US Immigration work across 12 different partner teams and external systems. They include internal HR partners, billing, reporting, and forms management systems, and user data management systems.

It was challenging to incorporate all the integration points into workstreams, and required lots of trial and error. We had to refine API calls and experiment with data tables. We couldn’t thoroughly test until we went live, and we had to maintain some manual processes until MIMS was up and running.
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Figure 2 shows an overview of MIMS and its integrations:

Multiple HR partners supported

We designed for two different HR personas in MIMS. One is an industry hire scenario, which typically deals with more experienced candidates. The other is a university hire scenario, where students are studying on an F1 visa. Recruiters initiate a visa evaluation process with CELA US Immigration before offering employment.

Attorneys used to use SharePoint to manage files along with other manual methods to manage the evaluation process for industry hires. SharePoint didn’t provide dynamic status updates, and recruiters suffered from a lack of visibility. Evaluations required many emails between recruiters and attorneys. Now, recruiters and attorneys use a MIMS portal to submit and track evaluation requests. The portal provides real-time updates.

The Microsoft university recruiting team has always had its own candidate tracker tool. We’ve integrated MIMS with that tool. The candidate tracker now pushes requests into MIMS, and MIMS pushes results out to the candidate tracker, so university recruiters don’t have to change the way they work.

Streamlined billing

CELA US Immigration uses a third-party legal billing system for its work with outside counsel. Before MIMS, the team had to work between two billing systems—and create cases in both—generating additional work and introducing the potential for error. It used to take an entire day to port and process data between the systems.
Today, it only takes a few hours. Billing requests are pushed directly into MIMS. A common field is stored in Dynamics 365 for each case level, creating a validation point. Results are then pushed out from MIMS to the system.

**Seamless reporting**

MIMS has two ways to provide the BI that CELA US Immigration expects. First, out-of-box Dynamics 365 reporting capabilities show typical data points, like current assigned cases, case stages, and so on. The immigration team also needs much deeper reports and data validations. The CELA US Immigration BI reporting team has its own analytics cube and customized reports. We found a new way to support the existing BI reporting environment, without disrupting users.

We turned to the [Dynamics 365 Data Export Service](https://microsoft.com/en-us/itsh) to support a deeper level of data replication for reporting. The Data Export Service replicates a Dynamics 365 MIMS data set into an Azure SQL database in a staging environment. The staging site is near real-time, with a maximum five-minute lag time. (The Data Export Service is publicly available for download from AppSource as part of the Dynamics 365 offering.)

**Comprehensive user data management**

At Microsoft, we have a solution for handling enterprise data. It is a single sign-on data catalog service with subscription and publication options. Built on Azure Logic Apps, it’s flexible and provides multiple self-service ways—such as push, pull, or query—to share and consume bulk data.

Integration with the data catalog ensures that all HR and finance-related employee information that is required for USCIS filing—such as standard title, discipline, annual pay, and work location—flows into MIMS. It also helps when a new candidate becomes an employee. Having the information in place lets our attorneys quickly kick off the immigration processes.

**Lightweight forms management**

After CELA US Immigration files immigration forms with USCIS, they get a physical receipt, which is stored as a scan. The immigration team uses a third-party tool to scan documents and uploads the files to SharePoint.

Documents for more than 15,000 employees and their dependents take up a lot of space. We didn’t want document storage to bog down Dynamics 365 performance.

We wrote a SharePoint-triggered Azure LogicApps workflow to integrate with the third-party scanning tool. It pulls document scan data into an Azure Blob storage site, using the [Attachment Management for Dynamics 365](https://microsoft.com/appsource) solution. Like the Data Export Service, the Attachment Management solution is also publicly available in AppSource. Using Blob storage lets us significantly reduce the size of our system.

**Data migration challenges**

When it comes to MIMS, everything is about data quality. Consider the potential impact on the employee—a visa-dependent employee could be denied permission to work if their immigration case data is incorrect. We had to know that data could be trusted not only to satisfy immigration processes, but also to support the CELA US Immigration leadership team’s need to keep workforce plans current.

Moving data from the third-party SaaS provider to MIMS was a big job. The old system had been implemented over a long time, and the original implementers were not the people currently supporting the tool. The data had been managed in a very unique way, and it didn’t reflect contemporary standards. Normalizing the data, agreeing on a data model, and baselining the data before moving it into MIMS were not trivial tasks.

Here are some key takeaways from the data migration experience:

- **Normalization requires investment.** Immigration cases are inherently complex to begin with, and contain multiple status layers and associated communication threads, documents, and questionnaires. Add to that the data related to multiple dependents. It took a dedicated resource investment of four weeks to understand the existing data structure and then four months after that to reliably translate it into our new system.

- **Old data cannot be completely understood.** We brought the data into the Azure Blob to analyze it and better understand how data was organized. It was assembled and encrypted in such a way that we couldn’t easily see how a complete record was built. We found that it was impossible to know all data connections, like the correct table to look up or how to map
dependencies within tables. In short, it was extremely difficult to unify records. Ultimately, we could make sense of 85 percent of the old data.

- **Manage expectations across the team.** When we redesigned the data model, we had to create an acceptable data baseline. For example, when the initial employee questionnaire was completed in the old system, answers were stored in multiple locations. We met with stakeholders, and concluded that we don’t need the completed questionnaire, because data is passed forward into a case or an employee’s record.

- **Some re-work is inevitable.** Because of some data gaps, we had to go back to our visa-dependent community and ask them to re-enter some information. The duplicate work was unfortunate, but it gave both the employee and CELA US Immigration clean data that is easy to retrieve.

- **Schema design is critical.** Once we designed our data model for MIMS, we created storage templates in Dynamics 365 and mapped schemas between old and new. Matching fields was a challenge, and we had to carefully parse many concatenated fields. This foundational step was critical.

- **Test for complexity.** Test scripts were built around many dependencies. We needed to be sure that all MIMS users—employees, outside counsel, internal counsel, and other partners—saw the workflows that they expected. Reporting stakeholders needed to be confident that MIMS data was available and robust enough for operational, enterprise-level reporting. We built out testing and staging systems and got lots of feedback.

- **Account for edge cases.** We discovered that there was lots of inactive data in the old system. We decided that if the principal employee was inactive—meaning that they had no active immigration issues—we wouldn’t bring the dependent data across. We stored that data in the Azure Blob for later reference. When we did this, we discovered that some employees had received their green card, but their legal dependents hadn’t, and we had to reactivate their dependents. There were other edge cases, and with our early and frequent previews, we were able to change the script.

### Ready for change

MIMS represents a significant mind shift in how CELA US Immigration and its partners work, and there was a steep learning curve. We had lots of conversations with the business, and people were ready—everyone understood that it would be a better experience. Before going live, adoption teams trained for several months in test environments.

We’ve gotten continuous feedback from immigration team employees, internal and external legal counsel, and other partners, which helps us prioritize ongoing development. We’re listening, building user stories, iterating, and developing new features and processes. We use Agile development methodologies and have monthly sprints, with a two- to three-week development cycle.

### Return on investment

MIMS has created tremendous gains in infrastructure cost avoidance and process efficiencies. For example:

- **Infrastructure costs.** By moving to a Dynamics 365-based platform, an overall cost avoidance of $3.5 million has been realized. This includes significant costs associated with the SaaS third-party system, such as licensing. Maintaining Dynamics 365 costs about $300,000 per year.

- **Process efficiencies.** CELA US Immigration now tracks time spent at every step, process, and stage of an immigration case. This level of oversight and auditing is helping the immigration team mine data and discover exactly where—using time-span data—cases get stuck. The information supports decisions that optimize stages, such as breaking them down into more steps if necessary, or add capacity. CELA US Immigration can better target process improvement efforts by focusing on trouble spots.

- **Time saved.** It now takes less than a second to create and process a candidate case. In the old system, it took one to two days.

- **Fast communication.** MIMS delivers immediate case status updates to partners. In the old system, there were no automatic status updates. The only way to communicate was email.

- **Optimized billing.** The billing process is ready within a few milliseconds. Outside counsel can bill with no delays.

- **SLA tracking improvements.** MIMS makes it easy to track the standard 60-day SLA for creating a new immigration case. The system helps CELA US Immigration hold external legal counsel accountable for the large amount of work that they do.
Looking ahead

MIMS is laying the table for CELA US Immigration going forward. We’ll continue to drive systems to Dynamics 365 for flexible and powerful case management and workflows. Ultimately, MIMS will become a single platform for all interactions with visa-dependent candidates and employees.

MIMS will give the immigration team a platform for new capabilities such as deeper automation, OCR capabilities, and AI technologies. Average case handling time—and costs—will be reduced through automated and smart workflows, routing, and alerting. The goal is to eliminate manual tracking and interaction.

New MIMS features will make it feasible for the immigration team to more closely track and refine its working relationships with external legal counsel.

Working smarter with Dynamics 365

We were able to largely configure—not customize—Dynamics 365 to create a powerful and intuitive solution that supports up to 60 unique and complex immigration workflows. Everything we used to build MIMS is publicly available, from the Dynamics 365 APIs, to Portal Capabilities, and add-ons like the Dynamics 365 Data Export Service and Attachment Management for Dynamics 365.

Immigration issues will probably never be simple or easy, but with MIMS we’ve created a much better way to manage them. MIMS helps CELA US Immigration work smarter.

For more information

Microsoft IT Showcase

microsoft.com/itsshowcase

Beyond CRM: Extending Dynamics 365 to manage contracts

Dynamics 365 automates complex transactions and business processes

Using tech to ease the fear of unexpected US travel ban

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