

xRM Application Platform

Take the “C” out of “CRM” and you’re left with Microsoft Dynamics Relationship Management—and that’s the right way to think about this product. Microsoft Dynamics CRM is not just about sales and marketing. It’s a platform for developing highly specific business applications—applications that manage and track information and processes around real world objects. That’s why we at Operasoft consider ourselves xRM specialists, the ‘x’ being whatever you need to manage in your company. It could be customers, but it could also be a grant, a suspect, building, or a potential candidate for hire. The key question is: “does my business need to track the information and activities related to this item?” If the answer is “yes,” Microsoft Dynamics CRM deserves some serious consideration.

The Real Story Behind Microsoft Dynamics CRM

Imagine that Microsoft Dynamics CRM is an iceberg. The part you see, the CRM application itself, sits above the water and represents only about a fifth of the total size of the iceberg. But 80% of the power and potential of Microsoft Dynamics CRM lies beneath the surface—in the platform layer and

the application framework. Once you know the real story behind Microsoft Dynamics CRM, you’ll understand how true this is.

Originally, Microsoft’s plan was to create not a product, but a development platform. In fact, at the very beginning, it was going to be just a platform and API’s. Microsoft wanted to build a horizontal platform that developers could use to create their own CRM systems. By providing a really solid, fully-featured platform that was easy to develop on, organizations could create powerful CRM systems tailored to their own needs, and third-party companies could create deep, vertical market CRM applications that they could host or sell.

Microsoft knew they needed a way to showcase this platform. It was obvious that what the world really needed was a 2-tiered approach: a configurable customer relationship engagement application with a deeply functional platform underneath. Rather than building an application and its underlying platform, Microsoft built a platform and framework with an application on top of it. That’s why Microsoft Dynamics CRM remains

such a flexible and powerful development tool for highly specific business applications. This development approach and strict policy of keeping the platform pure is why the product deserves consideration as a business application platform.

Not Just Sales, Not Just Customers

Because it was built as a platform, Microsoft Dynamics CRM had to be metadata-driven. While the application portion of the system includes a Sales module, a Marketing module, and a Service module, the underlying database simply contains a set of entities, each with certain characteristics and relationships. What is called an “opportunity” in the application and is used to track potential sales opportunities could just as easily be called a “proposal” and be used to track proposals and manage grant applications. What is called a “contact” could be a patient in a health and human services system. In fact, the platform allows you to change the names of these core entities to accommodate the function they will perform in your business. Business applications typically track information about people, money, products, or services; the activities

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and communications done around them; and the relationships between them. Microsoft Dynamics CRM is designed to capture exactly that kind of information. The people Microsoft Dynamics CRM tracks may all be internal to your organization, rather than customers. Or they might be citizens coming to your public sector agency. Or a combination of patients, doctors, and staff. It really does not matter. They are people with relationships and around whom actions are being performed and tracked. Here are just a few examples of success stories from organizations for which we've built applications using Microsoft Dynamics CRM as the platforms for non-sales purposes:

A large sanitation services company uses Microsoft Dynamics CRM to manage all of its employee HR tracking requirements, from candidates, to certification and training level, as well as time & attendance for payroll generation. In the system, "contacts" are employees. Each employee has areas in the system for tracking their level of training, biometric clock-in and out, evaluations, and certifications. The system also contains a portal so that employees can update their personal information, payroll information, and so on.

A large, retail pharmacy chain wanted a system to manage the process of reviewing and interviewing candidates. Using Microsoft Dynamics CRM, we built a system that not only keeps track of the candidates and their personal documents (resumes, cover letters, recommendations), but also manages and schedules all of the activities during the recruitment process, such as the initial screening, the manager review of the résumé, the interview, and so on.

A major transportation company in Canada uses Microsoft Dynamics CRM to receive, disseminate, and track the chain of organizational tasks and resulting sub-tasks within their organization and from all their locations. In this system, "accounts" are organizations and "contacts" are users charged with the coordination and response, procedures, requests, and other operational business matters.

The Agile Organization

Choosing a platform isn't just about solving today's problems. It's about building for the future. The platform you choose will be with you for some time to come, so you need to make sure you have a solid foundation on which to build your business—one that is able to respond as the business changes.

It's critical these days that businesses respond quickly to change. Therefore, organizations prefer not to spend years developing customized business application. Solutions need to be implemented in months, not years. You can't spend a year rolling out a CRM system. You can't spend a year rolling out an asset management system. You can't spend a year rolling out any kind of business application. If you spend six months trying to figure out what to build and another six months building it, the business you deployed it for will have already changed. You need to develop quickly, but you still need to develop a solid, usable, and fully-featured system. It's also important to get the application out there quickly so you can get people using it and get their feedback. Then you can change, improve, and release again. That kind of development allows your organization and your users to be productive more quickly, to develop more usable systems, and gets your users invested

in the tools as well as their success.

Selecting a platform that allows for rapid development and an iterative process is one of the keys to building a successful long-term CRM strategy. The right platform helps ensure business agility.

It Doesn't Pay to Grow Your Own

Often, people in organizations say to themselves; "Our company is so unique and specialized that nobody will have a system that addresses our business. We'd better build our own system—or get someone else to build a custom system for us."

It's true that every company is different. Quite often, an off-the-shelf product won't meet your needs. But the mistake these companies make is that they don't take into account the total cost of ownership for the system over the lifetime of the company. Building completely from scratch is a costly prospect. You have to design everything from the ground up and build it out. Building the security system incorrectly means opening your company to attacks. Building a UI framework that accommodates all the future possibilities is another challenge. And once it's built, you have to maintain it, update it, and of course, extend it, all on your own, and all at your ongoing expense.

When we at Operasoft meet with potential clients, the IT personnel sometimes tell us, "Well, we'll build a platform that can be used for the long haul. We can build our own framework and build it so it can be reused for future applications." It's good in theory, but rarely occurs in practice. It's hard and expensive to build a general-purpose platform. Furthermore, developers leave. The architects of the original platform

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may not be around when you go to build your second or third application. When that corporate knowledge departs, it can be time-consuming and costly to replace.

And lastly, if you've worked with or managed developers—or you are one—you know that nobody's code is ever as good as your own. Developers hate maintaining other people's code. They'd much rather write something new. Your developers will find all sorts of reasons why the current platform won't work or won't work well enough for the new application. Selecting an external platform settles the debate. You've got a solid, all-purpose platform that will be maintained by a dedicated group of external developers. So, your developers can write all the cool new code they want for the management applications your business depends upon, and leave the maintenance to Microsoft.

Keys to the Family Car

Keep in mind that Microsoft Dynamics CRM is the platform that the Microsoft development team used to build the world leading CRM application. Microsoft's CRM development team uses the same platform and the same Software Development Kit (SDK) as is used to customize it even further. That's not the case with all products. A more typical approach for companies that build CRM products is a closed or black box approach in which the product is self-contained. When customers inevitably come back wanting to extend and hook into the system, the CRM manufacturer creates an SDK that provides access to 20% or 30%—maybe even as much as 50%—of the functionality

of the core product. Not enough. Oh, and that's for external use only. The internal developers don't even use the SDK. In the case of Microsoft Dynamics CRM, the SDK you use is the exact same web services SDK that is used internally by Microsoft's developers. And, of course, the platform is the same. So, in theory, if you had the same money, caliber of people, and all the specifications for the Microsoft Dynamics CRM application, you could actually build the exact same product as Microsoft did. If the product out-of-the-box is not what you want it to be, it's infinitely modifiable and extensible at virtually any layer. It's like Microsoft just handed you the keys to the family car. You are not relegated to Microsoft's vision of what CRM was when it was built. You are free to drive off and create the future of what Microsoft Dynamics CRM can be.

The Plumbing and the fixtures

At very high-level, building business applications requires creating two major elements: the core plumbing and the custom-tailored functionality. The plumbing includes the data model, the security model, the relationships between elements in the system, the presentation layer, and so on. The functionality includes the specific business processes and problems that the system addresses and the particular ways that the system addresses them through the user interface. In most cases, the plumbing can be the same for all the applications in an organization. If it's done right, you can use the same data model, security model, user interface paradigm, and so on to build your HR management system, your recruitment management system, and your professional services

automation system. In fact, there are some big advantages to using the same plumbing for all your internal applications—but more about that later.

The functionality, on the other hand, varies for each application. You'll be storing and presenting different information to the user. You'll have different business processes and needs that each system solves. In every case, the user interface, the features you expose, and the requirements you implement have to work for that particular application's users, as well as for the organization.

The plumbing is an underlying layer that, if done well, can be written once and reused for all your applications. The functionality is a highly-visible layer that must be custom tailored to fit the organization and its user's needs. The functionality is where the majority of your development time and energy should be spent, because it's a highly tailored area and getting that piece right is the key to success.

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Unfortunately, most organizations spend most of their time on the plumbing. They develop their applications separately and at separate times. The platform is often reinvented or rewritten each time because it wasn't originally designed to meet the needs of multiple applications. So organizations end

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up with a hodge-podge of complex systems, all requiring regular maintenance.

Moreover, building the infrastructure and building it right can be time-consuming and costly. And it has to be done first, before the functionality can be implemented. That means that the functionality, the most important piece, gets whatever time is left in the schedule, and usually far from enough. So, organizations invest the most time and money in the area that requires the least unique and specific solution. They waste their money reinventing the wheel.

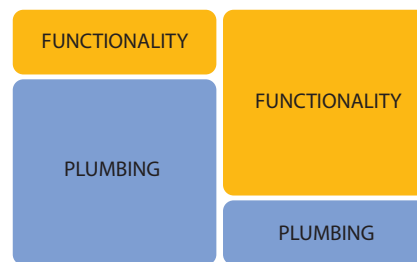
Using Microsoft Dynamics CRM as your platform means that the plumbing is done for you. You don't have to create a data model or a security model. Even much of the user interface is created for you. Moreover, you can use the same infrastructure for all of your applications. By building on this common platform, you can eliminate the majority of the development work required to get an application off the ground.

Using Microsoft Dynamics CRM as your platform means that... you can use the same infrastructure for all of your applications.

We've found that using Microsoft Dynamics CRM as your platform generally saves 50% to 70% of the development time. Effort you would have spent on the platform can be put towards the harder problem of identifying the right functionality and providing it in the right way. You can spend your time and money on the more important problems of determining exactly what information to track and manage;

what processes to put in place; and where, how, and to which users to expose different functionality—the more challenging work that will determine the application's success.

Fig 1. Custom Application Development vs. Microsoft Dynamics CRM as a Platform



Pay-back

When you use Microsoft Dynamics CRM as a platform, you pay may some upfront costs if you purchase the system. However, it is also available as a Software-as-a-service model, payable for small monthly per-user fees. Either way, those costs are quickly recuperated over a relatively short time, though. Because you've got that common layer for all of your applications, you never have to repeat the process of building a platform. Thus, the cost of your future applications is drastically reduced, paying back the cost of your initial investment in Microsoft CRM. Every time you add an application on top of Microsoft Dynamics CRM, you've reduced your base cost via the platform savings on the new application.

This savings also comes in terms of time and quality. Custom business applications are often not extensible or scalable over the long term. They are developed to address a specific need but, due to resource constraints, are typically built in

such a way that they cannot be quickly or easily repurposed or extended when new needs arise. With a solid, reliable platform, you have a predictable method for extending and scaling applications.

Lastly, you save money because Microsoft takes on much of the work for you. Instead of having to invest in updating and modifying your platform as new needs arise or technology changes, Microsoft takes on that cost. You have a full-time development and test team dedicated to your platform in the form of Microsoft—one you don't have to manage or incur the costs for. Microsoft bears the burden of updating the platform and making sure that it works with all the other Microsoft products, like SQL Server, Exchange, SharePoint, and Office. To take advantage of the newest technologies, all you need to do is upgrade Microsoft Dynamics CRM.

.NET versus CRM

.NET 3.5 now includes a data access layer and data model. The industry definitely understands what developers want and is moving to provide it. At this point, though, .NET only offers the most basic functionality. It doesn't include a security model or a UI framework and still requires a lot of raw development to get anywhere close to the functionality of Microsoft CRM's full platform and application framework.

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Microsoft Has Your Back

Microsoft is serious about CRM. The SDK is released quarterly. And while the company has its traditional development team working on the next version, it also has a sustained engineering team dedicated fulltime to supporting the existing version. The sustained engineering team spends its time monitoring the newsgroups, doing bug fixes, and putting together patches to address the pressing needs of current customers. The team's goal is to respond quickly, and to that end it puts out roll-up releases every six to nine months—as compared to the usual twelve to eighteen months for a service pack release.

Reuse, Repurpose, Repackage

One of the unanticipated benefits of having Microsoft Dynamics CRM as a business management platform is that it facilitates reuse. Code you used in one application can be reused or repurposed to serve the needs of your latest application. You'll soon have a collection of code and tools that you can leverage for new unforeseen applications. Not to mention the fact that your business applications all reuse the same data. So the recruitment management system you built for finding and hiring new employees is tied to the new relocation assistance system you've built. And they both refer to the same central database that stores information about employees.

Benefits to the Business

So far, we've talked about the development benefits of using Microsoft Dynamics CRM, in terms of time, cost, and the added agility it provides. What other benefits does a business derive from using Microsoft Dynamics CRM as its development platform?

Centralization

It's important to have a central location for storing and accessing data.

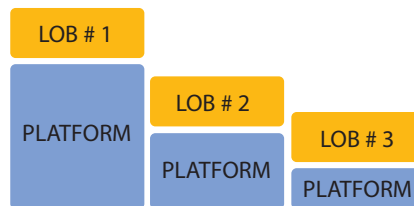
Standardization

A standard system with a consistent user experience and all the attendant benefits that go along with that, including easier adoption and lower training costs.

Simplification

CRM leads to a highly simplified development cycle with the expected cost and time savings. In fact, it's more configuration than development, in many cases.

Fig 2. Platform and Application Costs Decrease Over Time and Usage



Integration

A system built to be easy to integrate with the organization's existing systems.

Centralization

Using Microsoft Dynamics CRM as the platform for your custom business applications means that they all share a single database. They access information from the same location and in the same way. One of the key business benefits of this centralization is the visibility it provides. All the applications have access to all the information. Obviously, you can choose not to expose all information everywhere—but you get to choose.

You can expose whatever information you deem relevant and

to whomever needs it, without being concerned about whether your customer service application can talk to your sales force automation tool. Building all of the applications from the same platform helps prevent the silos of information that develop with disparate systems. Because all of the systems work together, users have one source where they can gain a complete view of all the organization's important data. For example, a sales representative planning to call a customer can easily see the customer's purchasing history, find out if the customer has made any recent service complaints, and verify that the customer's bills are up-to-date. The sales representative can go into her phone call confident, with a full view of any concerns that might need to be addressed and no fear of being blindsided by an outstanding issue.

Standardization

Your applications are built on Microsoft Dynamics CRM, they all inherit its clean, easy-to-navigate, web-like user interface. Users can navigate to and through your latest application in the same way they did with the first one. They don't have to learn a new user interface, meaning your employees are productive right away. No work loss associated with the new deployment. Likewise, your training and your support costs are lower. The vast majority of calls to help desk on a new application are new users trying to understand how and where to perform tasks. Microsoft Dynamics CRM's user interface is proven easy to use. One of its greatest strengths is the way it surfaces relevant tasks and information at the right time. Your users will need less training, be up to speed quicker, and need less ongoing support. You may find you don't even need to do formal training.

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Simplification

Using Microsoft Dynamics CRM as your platform provides a proven, standard architecture for all of your organization's systems. That means less integration and documentation issues. Instead of three different developers building three different systems to track clients, service calls, and finances—a common scenario within organizations—you'll have one system. As individuals come and go, knowledge about the application's architecture stays with the organization, providing long-term stability and continuity.

On the IT side, there's only one system to support, instead of three or four, each with their own quirks and needs. One set of hardware requirements. One license cost per user, no matter how many applications are built on the platform. New personnel have only one system to learn and your IT people can support multiple applications, because of their common base, rather than becoming specialists in one application or another. Standardizing reduces your IT costs dramatically.

Integration

Microsoft Dynamics CRM was built specifically to integrate. It's a simple web service: a .NET front end with a SQL back end. It's WS-I compliant and supports ODBC, BizTalk, and so on. We haven't found a system yet that we couldn't integrate with. Because it's .NET, you can always write code to connect and synchronize with external systems. And because it's not a custom platform and is built on common, well-supported servers applications like SQL and .NET, you can take advantage of the many tools put out by Microsoft Corporation and others

for these systems.

Benefits to the Users

We've talked a lot about benefits to the business, but what about the end-users in the organization? For the most part, of course, it's the applications you build that provide the benefits to these individuals. But the platform plays its part, as well. The value it adds falls into two categories:

Productivity Gains

Users are more productive because of the consistent and high-quality user interface and the many productivity tools that come with Microsoft Dynamics CRM.

Information Access

End-users have access to all the information they need when they need it and in the way they are most comfortable accessing it.

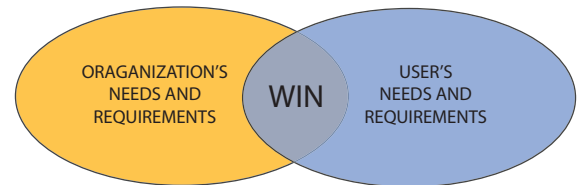
Productivity gains

An application is only as good as the data that goes into it. When users see their own productivity improved by using the system, they are more likely to enter the data that makes the system valuable to the organization. Microsoft Dynamics CRM comes with a number of productivity tools that add value for users, including personal workflows, automatic to-do notifications, accessibility features like keyboard access, the ability to build quick, custom reports, and seamless integration with Microsoft Outlook.

The success of an application starts with the end user. Ensuring that the platform provides a user-focused experience that is consistent across all applications is essential to achieving the goals of any system. The user interface can be a big

barrier to adoption by users in the organization. It's frightening how many times organizations have invested years in developing and deploying large and costly systems only to have the implementation fail because users found the system too difficult to learn and use. Far better to have employees choose to use an application rather than have to mandate its use.

Fig 3. Using Microsoft Dynamics CRM Lets You Increase the Size of the Middle Ground



When is the last time you watched through a one-way mirror as users work with your internal application? Microsoft does it all the time in their usability labs. They have a whole team dedicated to making Microsoft Dynamics CRM's user interface the best it can be. So the users at your company can benefit.

Another reason for failure is that the system ultimately deployed doesn't solve the employee's real problem, so they don't use it. Having Microsoft Dynamics CRM as your platform allows developers to focus on solving the employees' problems and solving them well, so that they choose to use your application and thereby enter the information the organization requires to meet its needs.

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Information Access

People need access to data in an increasing number of places and situations. For example, a business traveler might need access to an application on a mobile phone, over the Internet, or on a laptop while flying in an airplane. Microsoft Dynamics CRM allows users to access their data anytime, anywhere, and on the device they choose.

Offline access is also important. Contrary to popular belief, there are times when you don't have Internet access. That field service worker who is literally inspecting a field doesn't have access. Likewise for those housed in the bunker-like buildings of some office parks. And that traveling employee who just hit a dead zone still wants to do her work. Microsoft Dynamics CRM provides an excellent offline story.

Moreover, Microsoft Dynamics CRM lets users work in Microsoft Office applications, such as SharePoint and the omnipresent Microsoft Outlook. The platform is smartly integrated with Outlook, making it easy for users to schedule activities, and send and receive e-mails in Outlook, if that is where they are most comfortable.

Using Microsoft Dynamics CRM as your development platform means that all your business units have the same information-access benefit, increasing the likelihood they will be used and used consistently.

Benefits to the system administrator

A Responsive Product Team — The Microsoft Dynamics CRM team is very open to feedback from customers and developers. They rely on newsgroup and partner feedback to determine what features to focus

on. Customer feedback is often incorporated into interim updates. For example, the ability in 4.0 to display columns from other objects in CRM views and the auto-completion feature in lookups both came from developer feedback. As partners ourselves, that's important to us.

Business Entities and Business Logic

The extensible business logic layer in Microsoft Dynamics CRM provides for unmatched interoperability and customization options, and relies on technology used by millions of developers. You can inject custom logic during pre- and post-events around platform operations and you can write your platform extensions in any .NET language. That means hooking into Microsoft Dynamics CRM is very easy, so you can extend and integrate to your heart's content.

Security

The security model provides a highly efficient means for establishing and changing security privileges to ensure that users always have the appropriate access.

- The security model works in much the same way that files do in Microsoft Windows, following an Active Directory model.

- Role-based security defines privileges based on roles within an organization rather than on individual users. Users can have one or many roles associated with them, with the highest level role taking precedence.

- Privileges across roles are additive, so users can perform many roles within an organization and the system will automatically recognize

the correct security privileges.

- Users can share individual records with other users (temporary sharing) and delegate privileges to those users based on business needs that normal roles would have precluded.

- Filtered Views can be used to write queries or reports directly against the database, while adhering to the security rules of the user executing the query.

Workflow

By leveraging the Microsoft Windows Workflow Foundation, Microsoft Dynamics CRM provides efficient methods for organizations to increase productivity and automate tasks between different systems.

- You can construct workflows that can be executed across other applications because Microsoft Dynamics CRM leverages the same workflow engine as other Microsoft products, such as Microsoft Office SharePoint Server.

- Workflows can be executed manually, when records get created or deleted, when records statuses change, or even when a particular data value in a record changes.

- You can use workflows to automatically create activities, update records, send email on a user's behalf, and extend workflows with your own custom workflow actions.

- Custom workflow actions are .NET assemblies that can take data from Microsoft Dynamics CRM, pass it to another system, get a result, and use that result as a decision factor throughout the rest of the workflow.

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- You can define workflow rules within a simple web user interface that is similar to the Microsoft Outlook rules interface. For more complex workflows, you can open a rule inside Visual Studio to leverage the full capabilities of the workflow engine.

- Workflows can be defined at the Organizational level to apply to everyone, or by individuals as personal workflows. For example, when new leads come in, one user can set a workflow to automatically send an email using a template that user created, while another user can have a workflow automatically schedule a phone call activity for the user to call the new lead.

Services

Microsoft Dynamics CRM services break down the barriers between systems and facilitate a broad range of customizations:

- It's completely metadata-driven, and data model modifications are automatically represented in the dynamically generated web services.

- The entire platform is exposed through web services, which is the exact same collection of web services that Microsoft developers used in building Microsoft Dynamics CRM.

- Web services allow interaction with entities that ship in the box as well as with any custom entities that are created during configuration of the system.

- Microsoft Dynamics CRM for Outlook with Offline Access has a local copy of the web services so you can write against both the server and the offline clients.

- Programmability against these services is the same whether the user is connecting to the actual server or to the local data store on an offline client.

UI/Users

The user interface components enable you to give end users a proven, consistent and dynamic experience that maximizes the value of the user interaction:

- Base-level data model changes bubble up all the way through the UI layer so no coding is needed to enable basic functionality such as forms, searching, data views, and so on.

- You can bind to events on forms to build dynamic user experiences when users are filling in data. Microsoft Dynamics CRM exposes onload and on-before-save events at the form level and on-change events at the field level on the forms.

Security

The security model provides a highly efficient means for establishing and changing security privileges to ensure that users always have the appropriate access.

- Custom buttons/actions can be added to forms and data grids, and custom navigation panes and I Frames can be added into the application and forms to allow composite applications. Of course, developers can extend the basic functionality of the product with custom dialogs and code.

Let's Go!

So, now you know all the reasons why you should choose Microsoft Dynamics CRM as your development platform. Want to know more? There are several ways you can learn more

about Microsoft Dynamics CRM. Our solution architects at Operasoft would be happy to talk with you about the benefits of Microsoft Dynamics CRM and how it could be used as a development platform in your organization. We deeply believe in Microsoft Dynamics CRM as an agent for change in how organizations develop software and want to help organizations understand the benefits, whether or not it results in work for us. Microsoft is another good source of information. We also encourage you to ask other users about their experience with Microsoft Dynamics CRM. The CRM newsgroups are a great resource

Once you've explored the possibilities and the pros and cons, we're confident that, like us, you'll conclude Microsoft Dynamics CRM is the best choice for custom business application development.

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