George Washington School District:

Implementation Proposal

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Implementation Proposal

George Washington School District is at a pivotal moment looking forward to the future. Implementing an enterprise resource planning system (ERP) will provide the school district with substantial gains over its current systems, including increased reporting, better support, and ease of use for the users. However, the new system's implementation must be carefully planned and synchronized by the entire district to ensure that they can reap the benefits that are expected instead of being put further behind or potentially losing vital data related to the students and day-to-day operations.

Enterprise Resource Planning

Enterprise resource planning systems have predominantly been a mainstay in retail or sales-oriented companies due to their ability to integrate key business functions such as procurement, sales and analysis, human resources, payroll, and supply chain management. However, ERPs have recently become more popular in all types of organizations due to their ability to aggregate data and share it across existing systems. For example, one school district in Pennsylvania was able to completely replace a twenty-year-old legacy system and replace it with a modern ERP that even supports a mobile website for teachers and other employees to access from their smartphone (The School District of Philadelphia, 2020).

Existing Systems

Before a plan can be made to move to integrating with an ERP system, it is important to evaluate and understand the complexity and scope of the system or applications that it will be replacing so that the school board and integration team fully understand the relationship between old and new. Currently, the systems being maintained by the district's IT department include 40 individual school databases, one for each school, a VoIP system, a master student information

system, and individual databases for each of the administration's departments including human resources, payroll, child welfare, risk management, and more. The system is accessed through Microsoft Access and is run on a 2014 SQL Server and IBM AD/400 Mainframe.

The main problem with the current systems is that they are not fully integrated with each other, meaning if schools need to share information, it could be extremely complicated for end users to do so, or they would need to most likely export and import the information which may lead to human error. Additionally, with the systems not connecting well, they are not able to run complex reports on the district's databases. Further, having all of these unique systems lends itself to a poor user experience both to the end users and the IT department technicians that need to routinely perform maintenance on the systems.

Enterprise Resource Planning Systems

For the implementation at the school district, the ERP system of choice is Microsoft's Dynamics 365 package. The main reason for the selection is both given the reputability for the Microsoft brand as well as the fact that they already have a complete system designed specifically for school districts and education in mind (Microsoft Corporation, n.d.-b). This should limit the number of costly customizations compared to other vendor's packages.

Beyond this, Dynamics 365 is also built for the end user and user experience. Not only do they offer mobile applications that would allow users access from anywhere, but using the software allows a similar look and feel compared to other Microsoft products such as Excel, Word, and PowerPoint (Microsoft Corporation, n.d.-b). This is a significant benefit as it will largely cut down on the time needed to train and on-board employees, especially those who are less technical than others. Other top vendors include SAP and Oracle, but they tend to be more

oriented to a retail environment and would require a lot of customization for their fit in the school district (Panorama Consulting Group, 2020).

Software Integration & Assessment

For the initial integration of the ERP system, the goal is not to integrate 100% of the existing system, rather focus on the most important ones that would experience the largest gains. At present, the plan is to integrate the student information system, human resources, payroll, research and assessment, and risk management. While this may seem modest compared to the number of systems that are being used, this comprises of a large majority of the operational workflow in the district from day to day. The systems will be connected directly to the ERP application which will serve information and access to users through the Internet instead of through a direct connection to each of the databases or servers.

In order to fully integrate these systems and databases with the new ERP, a new central database will be developed that will house all of the shared information and tables. Synchronized jobs will begin importing all of the data from the systems into this new area which will be the new hub for everything. The IT department will also secure multiple servers and use them in conjunction with a load balancer to distribute requests evenly, so the servers do not become overwhelmed at peak times. After the initial implementation, the district can slowly begin to add additional systems into the ERP as they see fit until all systems are integrated, or there are no more that require integration in the event they are purposely left alone. By adding in systems slowly, it will alleviate strain on the users that are accessing the system and allow for a higher chance for success. This will also allow the district to ensure that all of the data remains accurate since they will be able to focus more in depth on the individual systems instead of all of them at once.

Visualization

Being able to visualize the layout of the new system is an important step into understanding how it will function correctly. At its core, there are a number of systems and databases that will be connected through a central server and database which is the ERP system. From there, the system will interface and send data through the Internet where users can access it. The users will not connect directly with the individual databases or servers, nor will each of the system network with each other without going through the ERP system. This setup is shown in *Figure 1*.

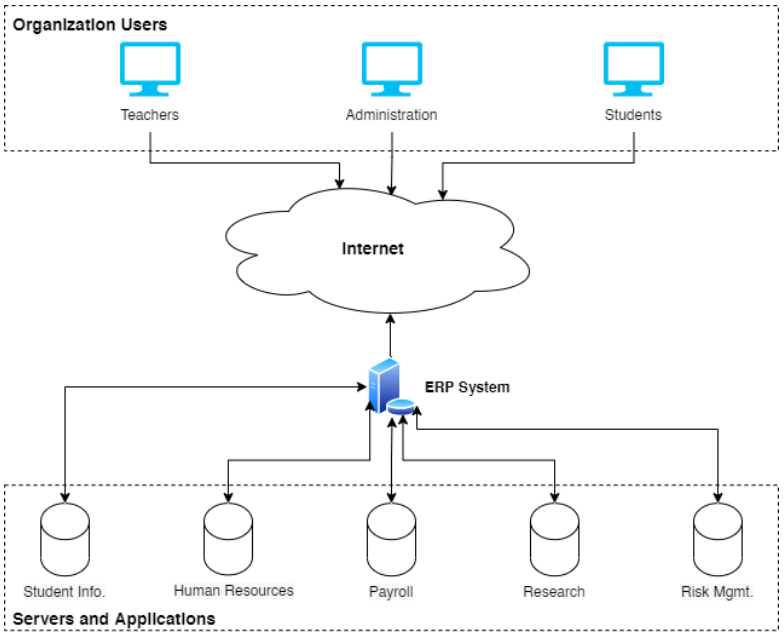

Figure 1 This brief diagram shows a network layout of the proposed integration. Each of the users will connect to the Internet where they will be able to get the information they need through the ERP system. They will not connect directly to each system.

Implementation

Implementing an ERP system is not as simple as just flipping a switch or installing a new piece of software to a computer. It is an extremely complex process where multiple variables could negatively affect the outcome of the project. Before the IT department even starts physical work, there are weeks or even months of additional fact-finding tasks that need to be completed

so that everyone involved understands the full scope of the implementation. While the IT department will primarily be tasked with the oversight of the project, multiple stakeholders from across the district, including board members, administrators, and teachers, will all have a crucial job to contribute.

Approach

For the project, the first step now that the project is approved is to build a team that will lead the entire process. By nature of the work, the entire IT department will be involved, but a select group of technicians will be part of the core project team, which will be lead by the Director of Information Technology. Additionally, the team will be comprised of two board members, as appointed by the school board and ten teachers, four from the elementary schools, two from the middle schools, two from the high schools, and two from the special education department, all of whom will be selected by the superintendent. There will also be a number of other team members which would include one from each administration department as selected by the respective director as well as the assistant superintendent of schools. While it is a large team, this team is representative of the entire district and will be the users who test the new system, ensure requirements are being met, and above all, that the new system will be a success for all of the users.

Like any project, it will be important for this team to follow a typical project management approach so that they can make use of the inherent benefits of an organized project. The Director of IT will act as the project manager for the team and will ensure that the team has all of the necessary resources for success. The director will strategize with their team to identify a proper meeting schedule for the entire team to hear project updates, progress reports, and more while also having an open forum to discuss any impediments. As part of this, the director will also

develop a formal communication plan that the team will be required to use and reference so that there is clear communication across the board. With a project of this size, it is possible for the team to miss vital components of the project, so it is every single member of the team's responsibility to communicate all of the requirements and needs.

Project Plan

This project will follow a five-step approach and strategy that has been identified by Microsoft for their Dynamics 365 ERP system. The steps include preparation and planning, procedure review, data preparation, testing and training, and rollout and evaluation (Microsoft Corporation, n.d.-a). The different stakeholders will have varying levels of involvement throughout each individual phase. Once the team is formed, they can begin the first phase of implementation, which is planning for the project. During this time, the team will begin identifying crucial operational functions that will be impacted by the new system (Microsoft Corporation, n.d.-a). While the IT department is reviewing current systems impacted, the non-technical team members will have formal training on the process and what to expect as the project continues. This will lead directly into the second phase, procedure review. During this time, the IT department will be familiarizing itself with the many processes that each of the district's departments handles from day to day and identify what procedures can be improved. The non-technical members of the team will also work with their departments or coworkers to make sure everything is well accounted for.

The third phase of the project's implementation will rely heavily on the IT department as it is focused solely on preparing the data for conversion to the new system. This will also include any additional manipulation to the current systems to accommodate the new ERP (Microsoft Corporation, n.d.-a). Once a base version of the ERP is staged and networked with existing

applications, the entire team can begin the fourth stage by testing out the system in its entirety, making sure that all of the previously identified tasks can still be completed, and that data remains accurate (Microsoft Corporation, n.d.-a). This is one of the most crucial parts of the process as it is during this time that any major bugs will be fixed. The team will also use this time to begin training other users in the district (Microsoft Corporation, n.d.-a). Once the system is deemed ready to go, it will enter the final phase, where it will be rolled out to the entire district and become the primary system of use for everyone. Both the technical and non-technical team members will be vital for support during this phase as they will need to continue to monitor the system for bugs and help others complete their day-to-day tasks until they become more acclimated with the system (Microsoft Corporation, n.d.-a).

Timeline

The project will formally begin during the summer in July, right at the start of the fiscal year. From the start to the beginning of the academic year, the IT staff and core team will gather requirements on the current system and conduct interviews with various stakeholders. Once classes resume, the team will continue to monitor users' actions for a period of one month at which point development will begin. Around March, it is expected to have the team begin testing the system and planning for training the entire district. Full rollout of the ERP will begin around May or June with the entire district able to begin training and learning the system over the following summer in preparation for the following academic year.

Integration Tools

From a technical standpoint, the team will adopt the Agile framework and Scrum methodology to structure the project. This specific project strategy has seen numerous benefits to not only development projects in general but ERP system implementation specifically. Following

Agile will allow the team to be fluid in their work and quickly overcome impediments as they arise. Additionally, following the Scrum methodology will mean that the team can break the entire project, which is rather long and complex, into smaller, iterative sprints that can be testable units on their own (Casanova et al., 2019). The approach will make the project much more manageable and easier to implement as well as easier to rollback should there be a major post-release issue that cannot be fixed quickly.

Beyond this, the first procedural tool that will be implemented for the team is both a communication plan and a change management process. As mentioned, this project implementation will be a very complex one, much more than building a new application. Having a communication plan implemented will provide transparency across the team and even the entire district for the dissemination of critical information that could affect a number of users or the development process. Likewise, a change management process will ensure that the team is making changes in the best interest of all users and the district and that the scope of the project remains balanced and manageable throughout the entire duration. Making frequent changes, even seemingly small ones, may have a waterfall effect on other components leading to wasted time, unnecessary downstream changes, stress on the team, and inflated costs.

Business Process Reengineering

While it can be a difficult subject to come to terms with for some companies or employees, business process reengineering (BPR) is a crucial step to take before implementing an ERP system. Without, ERP integrations are 70% more likely to fail than that of a company that abided by BPR (Chinnappen, 2016). At its core, this process revolves around the concept of evaluating existing processes and modifying them for the sake of efficiency and improvement (Chief Management Officer, n.d.). Generally, steps to follow include identifying current

processes, determining any inefficiencies and a plan to improve, implementing the changes, and monitoring and improving again.

For this project, the entire team will carefully review all of the functions and tasks that the users complete and document them together. Once documented, the team will review and see where there is the potential for overlap and use the ERP to adjust the processes for maximum benefit. For example, instead of a teacher putting in a request for supplies with their school's office who in turn, sends the request to another office in the administration building, each school can order their own supplies or have the teachers work directly with the administration through the system. Likewise, instead of having a paper registration form for students that parents need to fill out and then a secretary needs to enter into the system, a parent should be able to enter their student directly into a form that interfaces with the system. Through careful changes such as these, the school district will be able to leverage the ERP system to its maximum potential and gain significant benefits over the current system.

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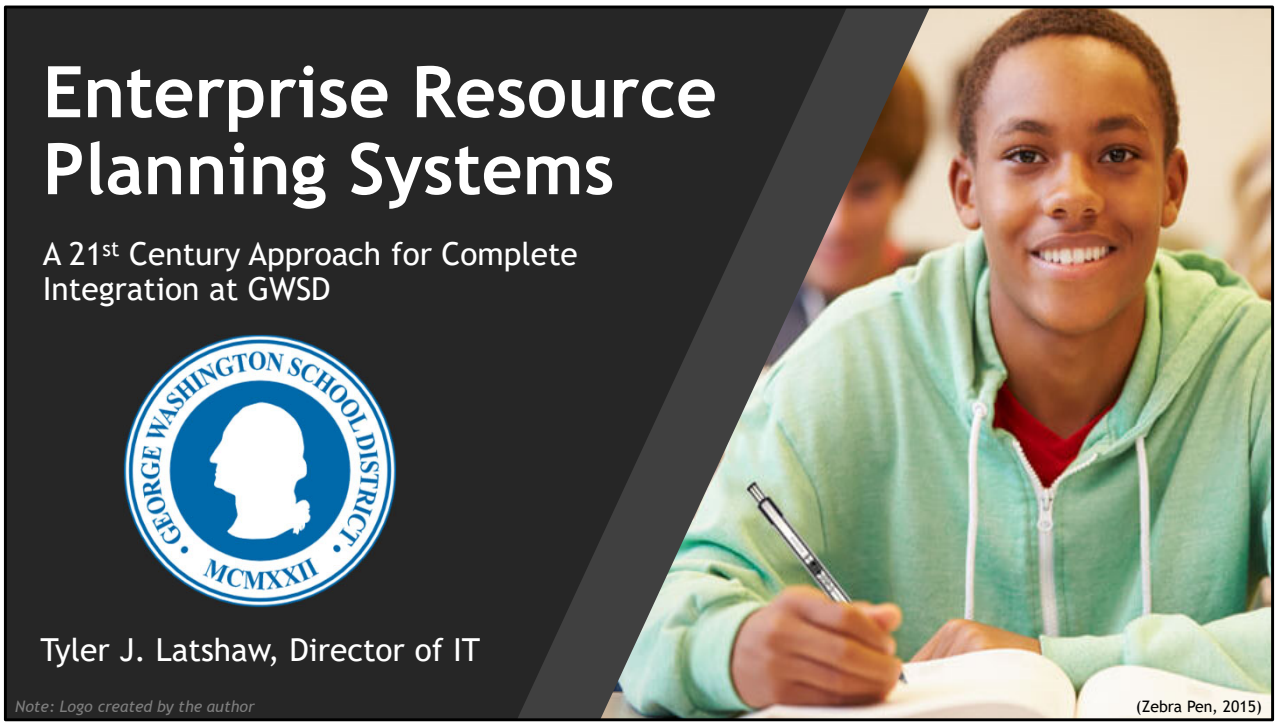
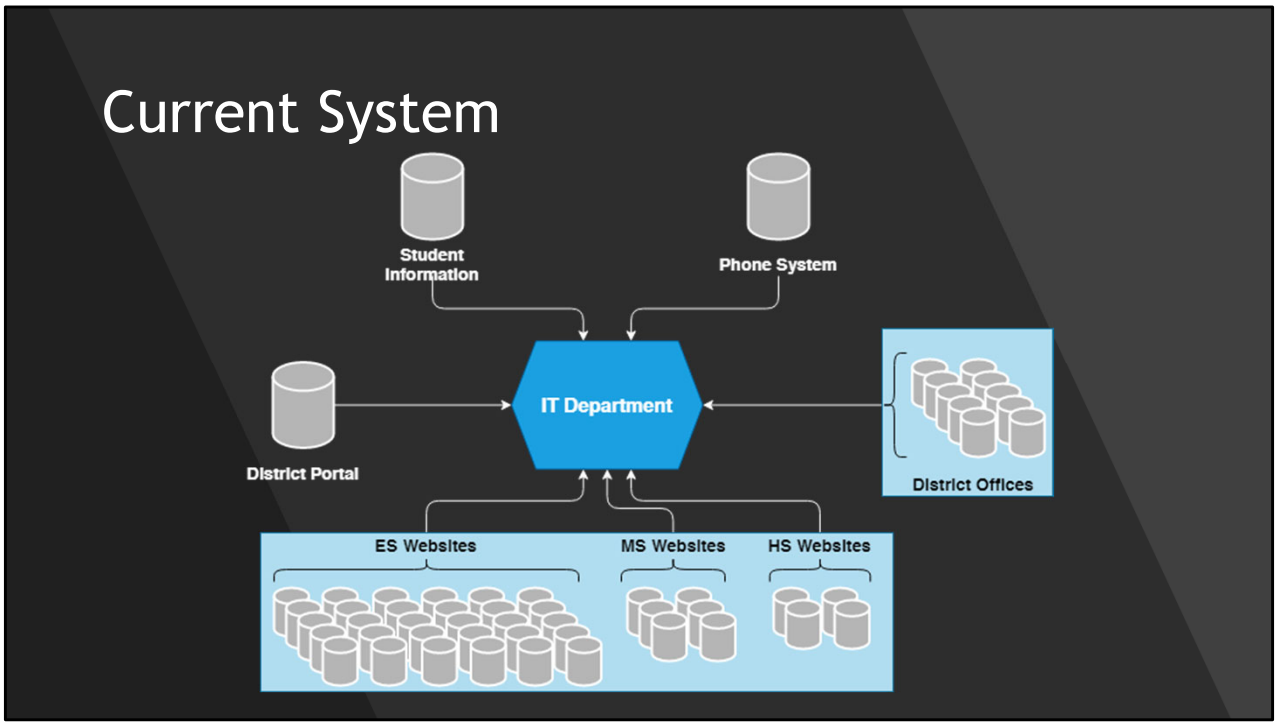


Good evening, my name is Tyler Latshaw, and I am the Director of Information Technology for the George Washington School District. I'd like to take a moment to thank the members of the board for allowing me to present to you tonight. Upgrading our systems and implementing an enterprise resource planning system is a crucial investment in the long-term success of our technology at GWSD.

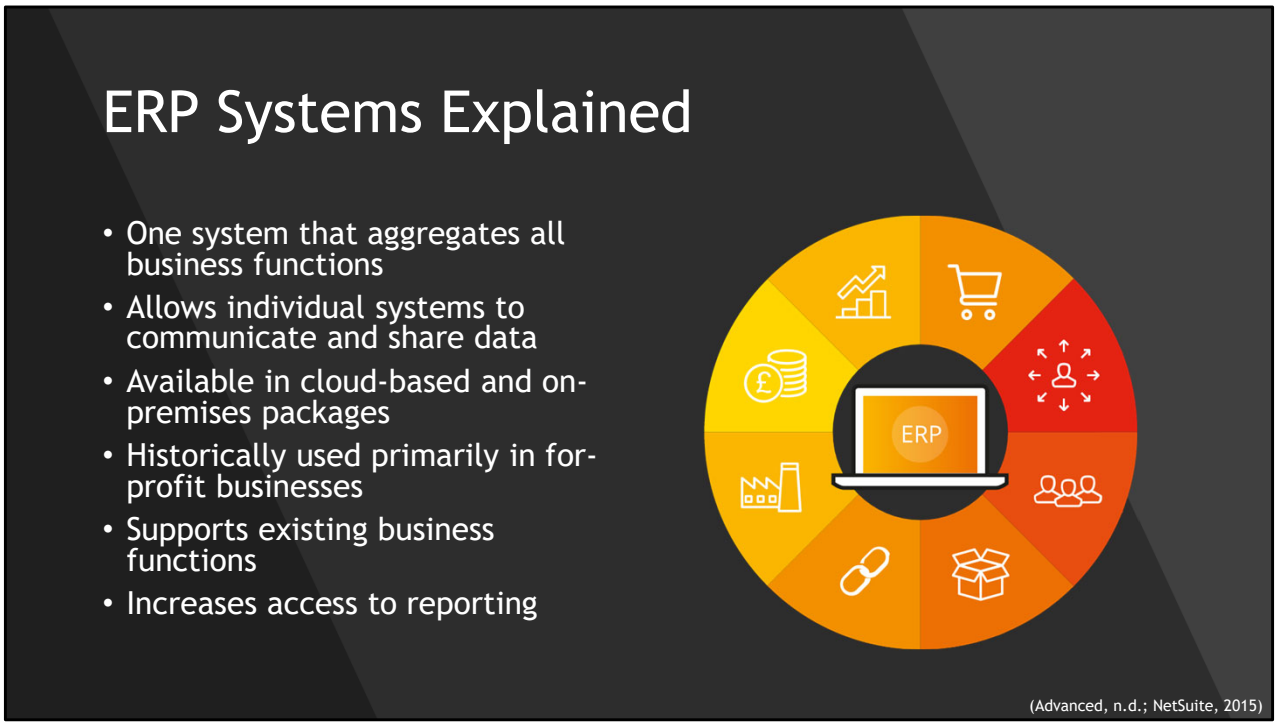


Before we jump into what an ERP system is, I'd like to take a moment to show you a brief layout of all of our current systems that we have in place, so you have the background to compare the new ERP system against. By far our biggest, and debatably most important system is our student information system that carries all of our student data. We also have a voice-over-IP phone system, district portal, and ten separate databases for each of our district offices, including human resources department, budget, maintenance and operations, accounting, information technology, education technology, child welfare and attendance, risk management, special programs, and the special education department. We also maintain support for each of the 40 school's websites and databases.

Current System Drawbacks

- Over 50 unique databases across all locations
- Systems cannot easily communicate with each other
- Manual intervention is needed for advanced reporting
- Maintaining the structure and support is costly
- Accessing different systems is complicated for users
- Lack of consistency in data storage
- Increased potential for data loss and intrusions

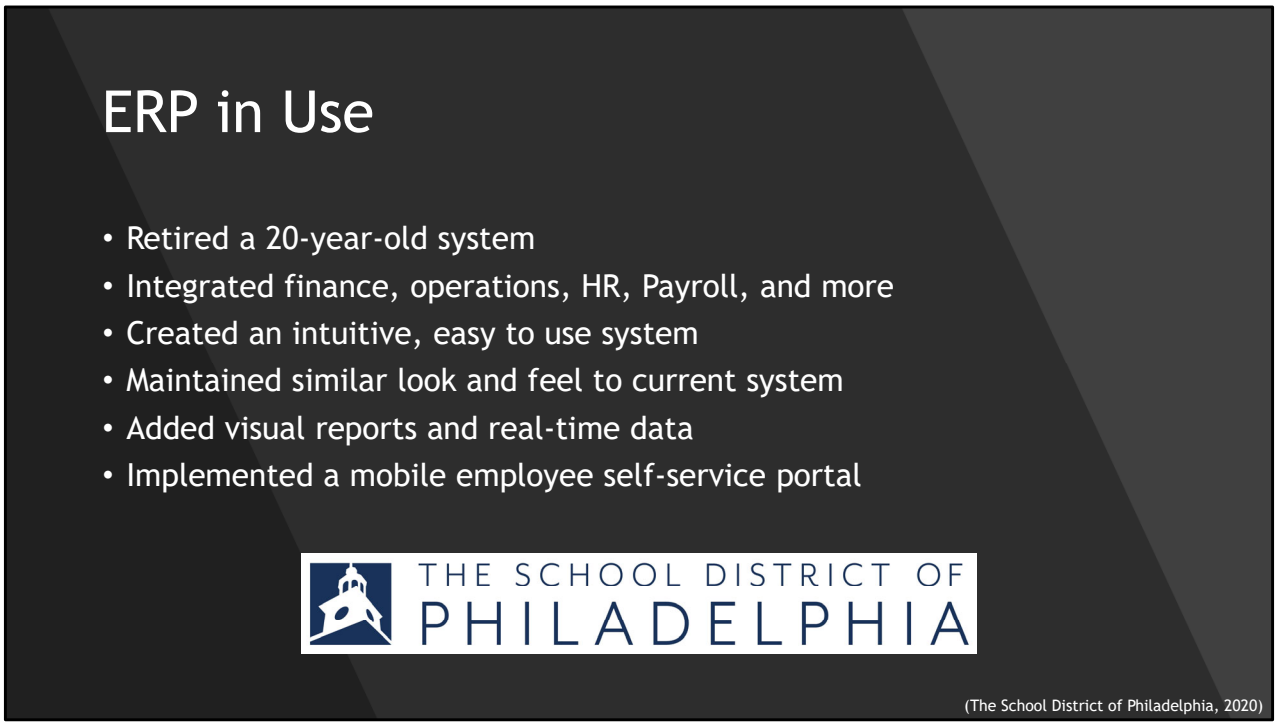
You can probably imagine that there are a number of drawbacks from having over 50 unique databases and systems to maintain. Right now, none of the systems are fully integrated and, as a result, don't communicate well with each other. This means that if data is in one application and needs to get into another one, it needs to be added manually. The same can be said for any advanced reporting. All of it needs to be completed manually. In general, the systems can be fairly complicated to maintain and don't provide our users with the best user experience. Given that there is a lack of consistency and integration, there is also an increase in the potential for data loss as well as security concerns.



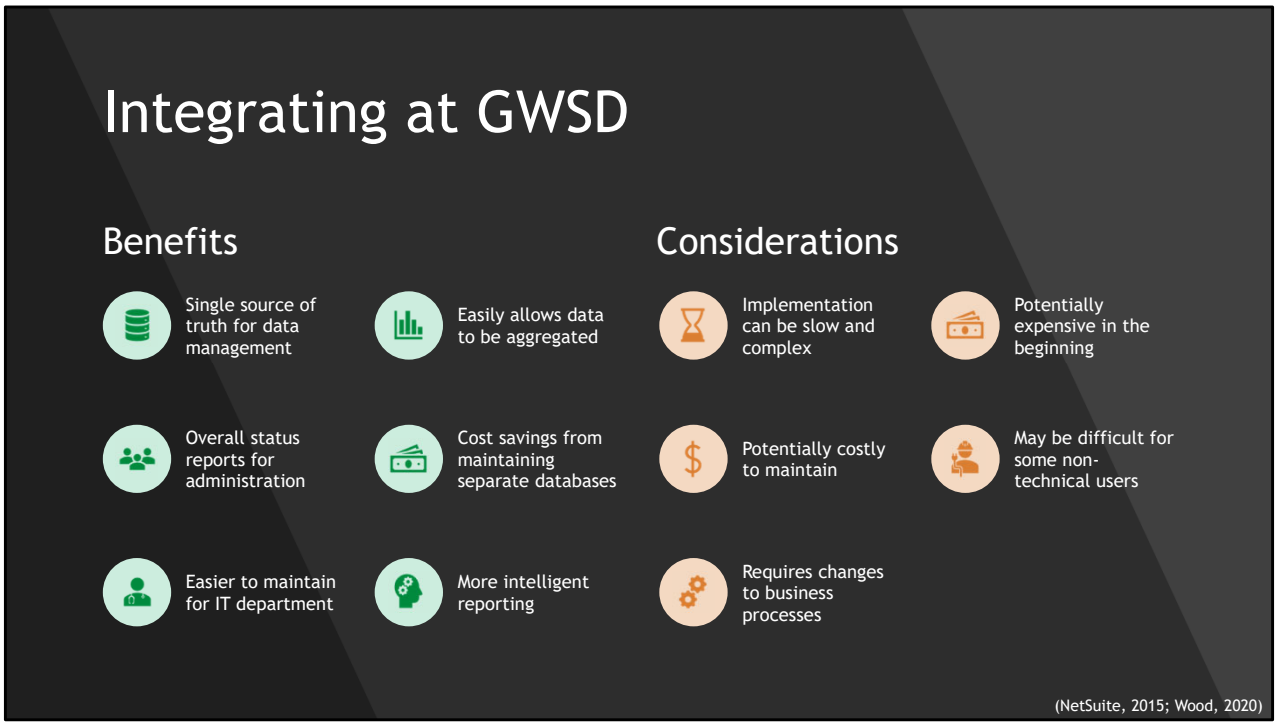
That leads us to what an ERP system is. Some of you may already be familiar with the concept of enterprise resource planning systems or ERPs. ERPs have historically been associated with larger corporations or sales and retail environments, but within the past decade, they have become a more mainstream fixture in businesses of all sizes and even in educational settings. At its core, an ERP system is a single application or program that connects all existing systems like a bridge and allows all of the systems to seamlessly communicate with each other. Think of a large manufacturer. Their crucial applications could include a payroll system, a procurement system, and a sales system, among others. It is important for all of those systems to "talk" to each other so that is where an ERP bridges the gap. Instead of needing an employee to pull a report on one system and input that data into another, all of the data will be shared and allow for increased reporting.

ERP systems are available both in the cloud and on-site, as well as in some hybrid configurations. Either way, the system should be able to support all of the important operational functions while adding value to the organization as a whole. We expect our implementation to help absorb a lot of our outdated processes and systems while increasing efficiency and saving both time and resources (NetSuite, 2015).

Like most software packages, there are a number of systems and vendors that can be selected for our specific applications and needs. Some of the top vendors include Oracle, SAP, and Microsoft, which hosts the ERP system Microsoft Dynamics 365 (Panorama Consulting Group, 2020). We are proposing using Microsoft Dynamics 365 for our implementation. There are a number of significant advantages for this platform, but the biggest for us would be the interface. The system is built very similarly to the rest of Microsoft Office and Office 365, which we already use, so the learning curve for the physical interface will be a lot less for the users.

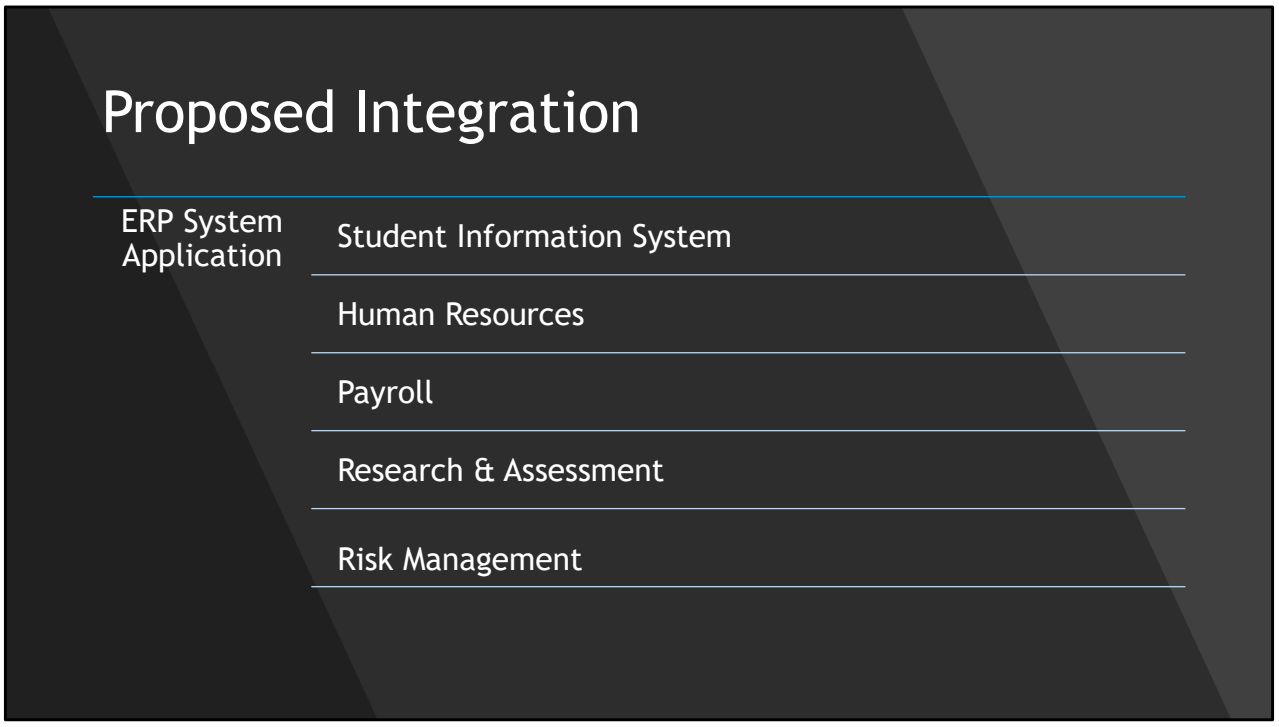


You may have noticed earlier that I mentioned ERP systems have historically been associated with retail or sales-oriented businesses, but that is not always the case anymore. I wanted to highlight The School District of Philadelphia for its successful implementation and use of a similar system. They implemented an ERP to replace their 20-year-old legacy system and completely integrated their finance, operations, HR, Payroll, and purchasing systems all while having the same look and feel for users. Anything they did update had a more intuitive feel that became second nature to use. Two major benefits that they gained included an increase in reporting and real-time data, along with creating a mobile website for employees to access things like payroll and time off on the go.



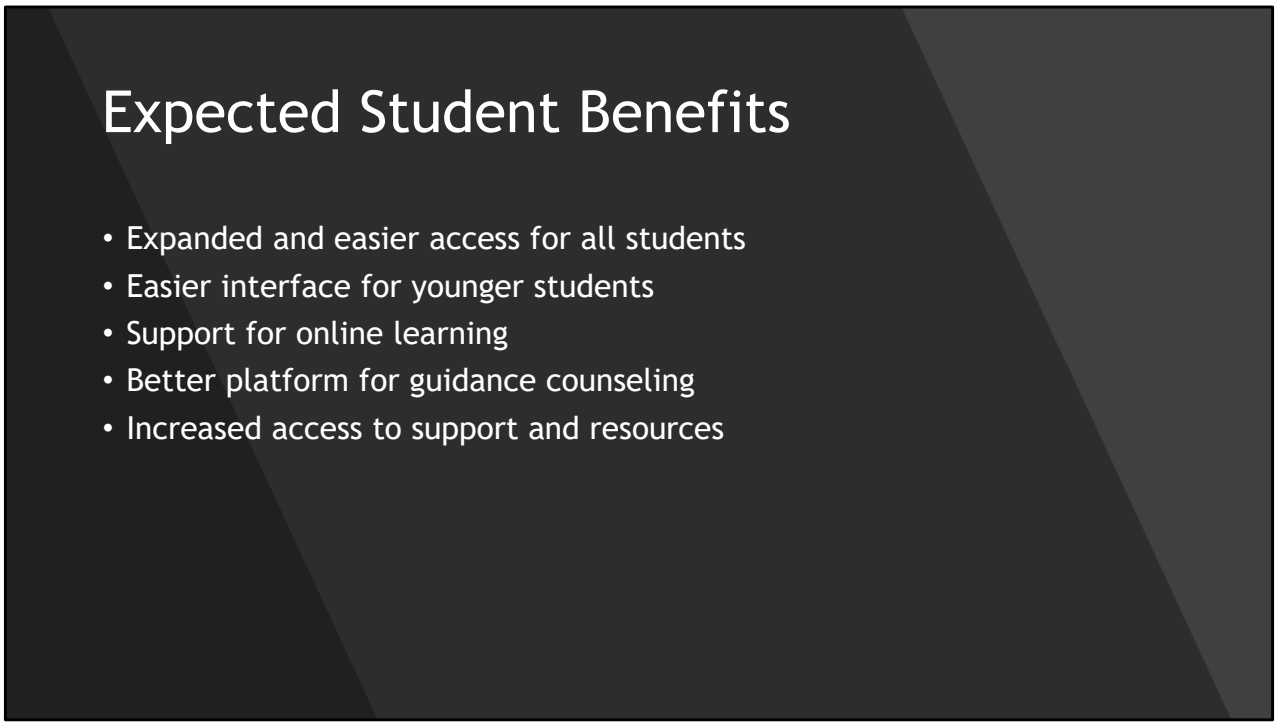
There are many benefits to integrating an organization's systems, both in for-profit and nonprofit environments like ours. The biggest benefits are that the ERP becomes the single source of truth as data will be shared as well as just being able to easily share data between existing applications. ERPs also add a lot of value for administrative teams and even for you as the board in the form of status reports on how the district is doing as a whole. As I mentioned before, ERP systems can also save an organization time and money from a hardware and software perspective, but also in terms of the manpower needed to service systems from the IT department. Lastly, something that will be a recurring theme is that ERP systems can lead to much more advanced and intelligent reporting (NetSuite, 2015).

While there are a lot of clear benefits, I did want to be fully transparent and highlight a few considerations as well. First off, implementing an ERP system can be a slow and extremely complex process and can be very expensive. We are looking at at least nine months and likely the entire $100,000 grant. After it is implemented, it will naturally require maintenance which can also be rather pricey. In terms of users, not everyone will be able to pick up the new system as easily as others, especially since this will lead to a few business processes needing to be changed (Wood, 2020). However, it is important to mention that most implementations, if done correctly, are able to see a sizable return on investment. This will depend on how willing the users are to accept it, though.

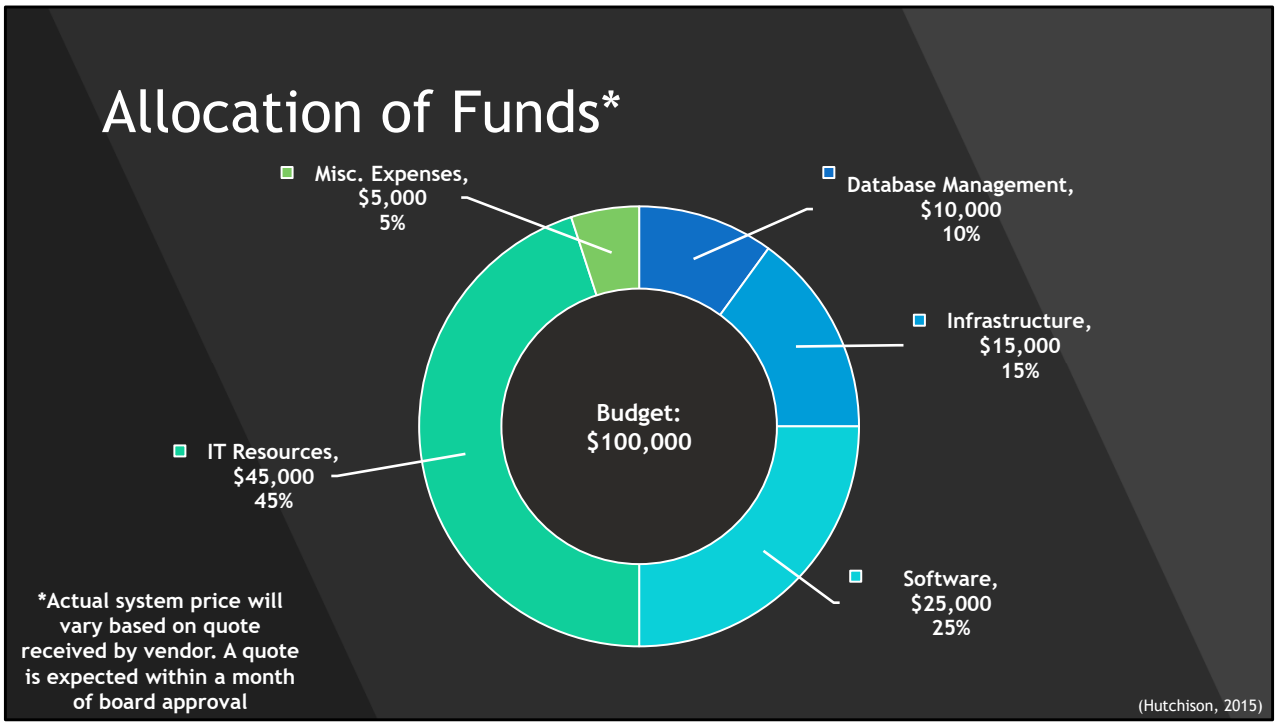


What we are proposing is to use the newly implemented ERP system to completely integrate the student information system, HR system, payroll functions, research and assessment application, and risk management systems. We have identified these systems in particular as being the most used by the district and having the most need from sharing cross-departmental data. For example, it would be advantageous for us to easily port data from the HR system into the payroll system or from the student information system to the research and risk assessment counterpart. At this time, this is only a subset of our systems, but it accounts for the vast majority of our day-to-day operations. Once we become more acclimated with the system as a district, we will reevaluate adding the rest of the systems based on the performance.

I had mentioned before what some of the main benefits of implementing an ERP system are in general, but I would like to take a moment to put that into the perspective of what we expect for our district. For us, reporting will be key. The new system will allow us greater access to all of our reports as well as much more advanced reporting that compounds data from all of the integrated systems. We anticipate this to be not only cost savings but also a time saver as it will allow my department a much easier time to support the users. For you and the administration, you can expect to be able to make more data-driven decisions, and the general users can expect a much easier user experience accessing the data they need. Lastly, the new system will also help us remain in compliance with different federal and state regulations when it comes to data handling (Frontline Education, n.d.).



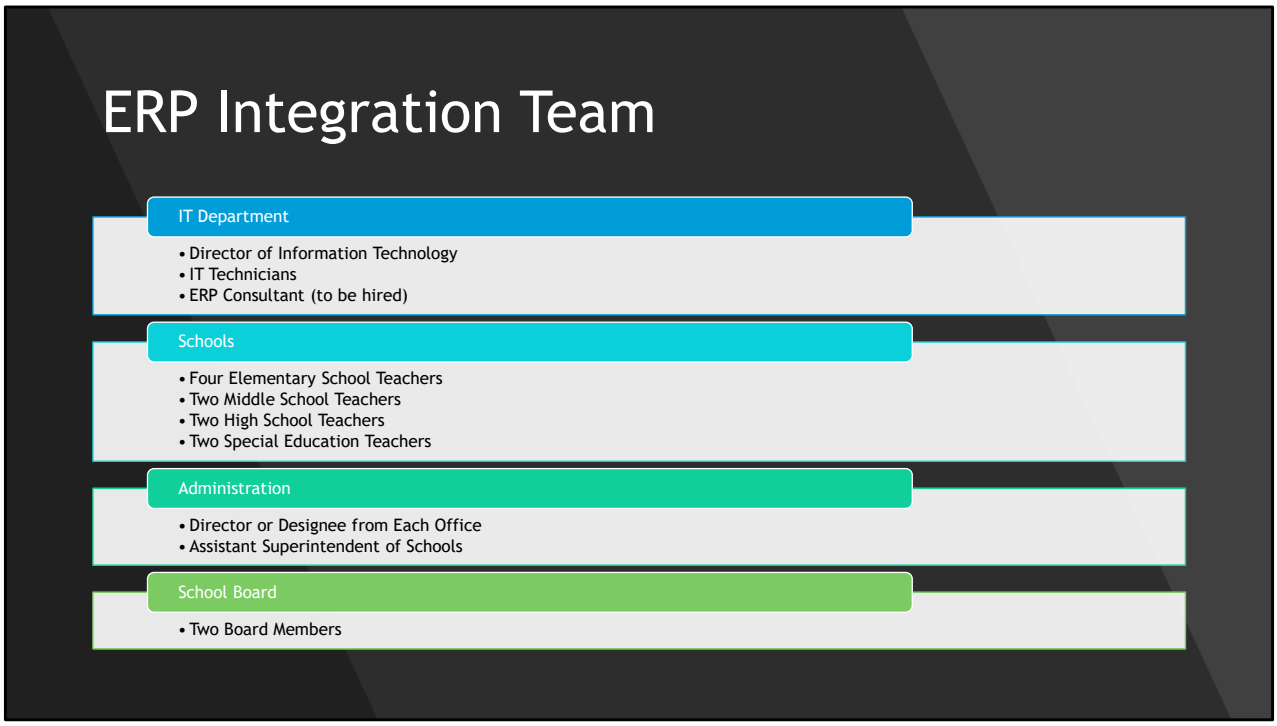
From a student perspective, we expect a number of sizable gains as well. Simply put, we expect the new system to expand access and provide our students an easier time using the system. This is partly through an easier-to-use interface for our younger students, but also with the added support for online or virtual learning for students whether it be for the weather or extended illness. We also anticipate building out a better platform for counseling as well as a way to provide students access to support and resources.



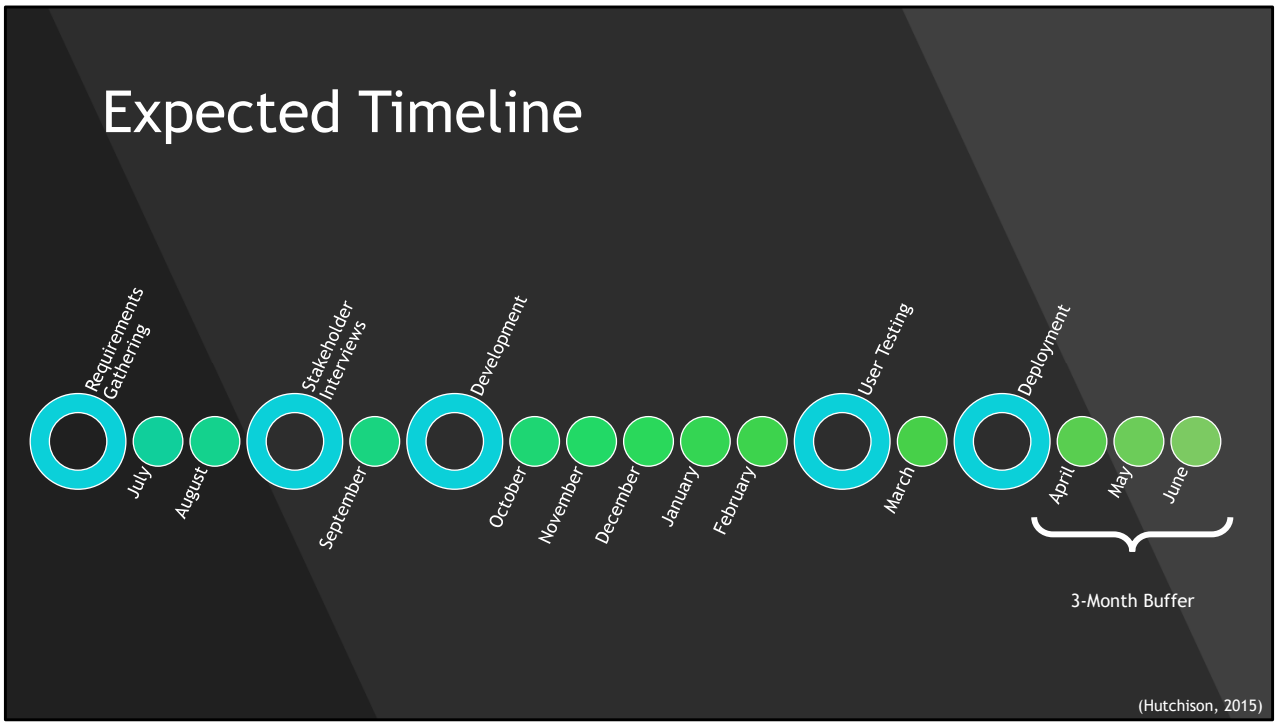
For full transparency, I would like to explain where the grant would be used as there are multiple components to implementing an ERP system. For this project, we have identified five primary cost drivers which include database management, infrastructure, software, IT resources, and miscellaneous expenses. IT resources will be the largest driver at 45% of the budget. This will include the cost to train our staff where needed and the labor to work with the ERP vendor to get the system implemented. At 25% of the budget, we have the actual software that we plan to purchase, and at 15% is the general infrastructure. We will need to make a few upgrades to our hardware and other affected applications so that would be covered under this. Additionally, we will need to make a few changes and upgrades to our databases so that would be covered by 10% of the budget. We are also allocating 5% of the grant to miscellaneous expenses that may arise during the course of implementation as well as any maintenance in the near future. Depending on the vendor application we select, there may also be yearly licensing fees or additional costs. That is not factored into this initial implementation budget and will instead be worked into the district's budget.

The full cost of the new system will be quoted to us once we receive your approval to move forward in the implementation process, and we can provide more accurate cost allocation at that point. We will also be looking to potentially contract out an ERP consultant to assist us with the planning and implementation process. That will likely utilize a large portion of our IT resource allocation, but we have also considered the possibility of hiring an employee full-time

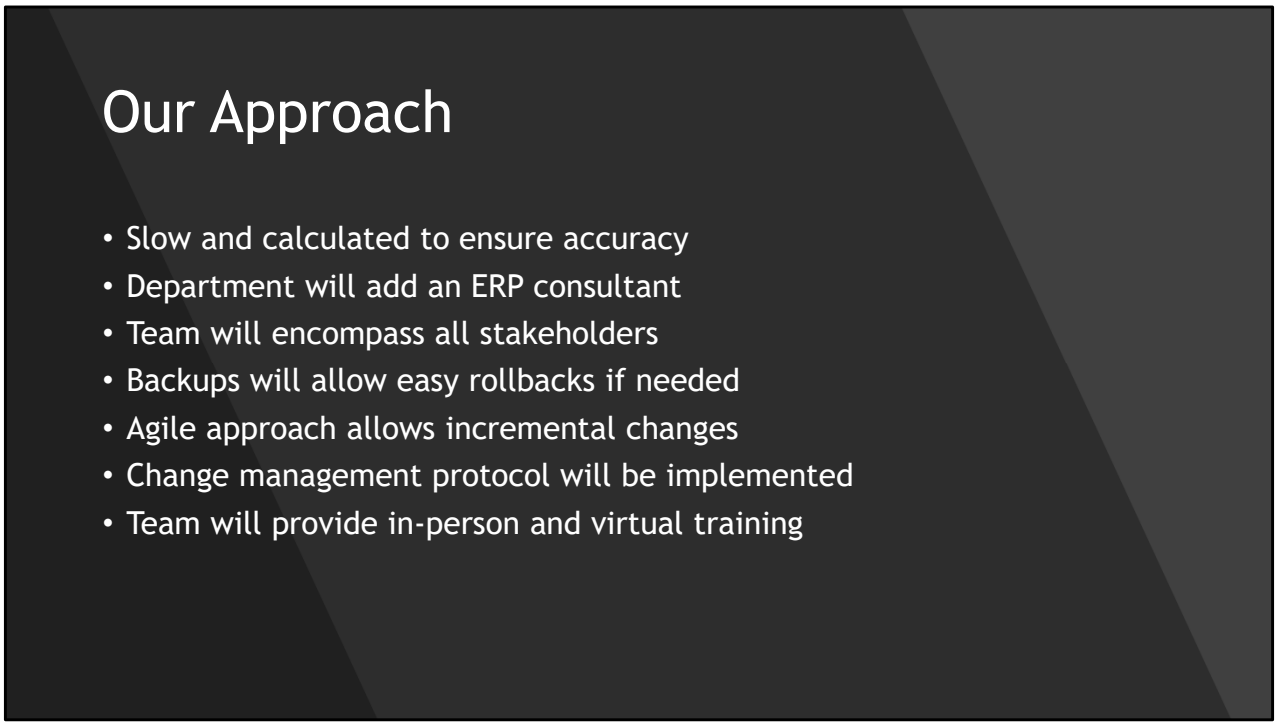
for this role and building that into our department budget as they would be able to perform maintenance on the system in the future.



In order to make sure that all of the needs and requirements are met, we will be deploying an integration team that will oversee the entire implementation. The core development team will be headed up by myself and consist of my department and the new ERP Consultant or permanent hire, depending on how we go about it. The full team will also include professional and support staff from all areas of the district. From the schools, we will have ten teachers representing the elementary, middle, and high schools as well as special education. From the administration building, we will include the director or designee from each of the offices such as HR, Accounting, and Business Services, as well as the assistant superintendent of schools. We'd also like to include two school board members for your guidance and to make sure that your needs are accounted for as well. Collectively, this team will be directly responsible for ensuring that everyone's needs are met, and the entire system is in the best interest of all users.



I had mentioned before that we anticipate the entire implementation to take upwards of 9 months. We are hoping to begin gathering requirements in July, right at the beginning of the fiscal year, continuing to the start of the academic year. Once the year starts, the team will begin shadowing stakeholders and conducting interviews to learn all of the processes. The development will begin shortly after. By March, we hope to begin end-user testing and are planning for a rollout by April or early May. We are purposely aiming for the end of the school year for our release so that teachers will not need to start using the new system until the summer where they will have months of training to acclimate to it. This will also give us about a three-month buffer for any unforeseen roadblocks along the way without delaying the project too much.



I do recognize that this was a lot of information and can seem like an overwhelming process for some. We are taking a unique approach to our implementation that is customized for our operational style. First and foremost, we are taking things slow and methodically so that we are not rushing users into something new. Like I had just mentioned, we are looking to also add a team that comprises stakeholders from all functional units of the district and a professional ERP consultant. We will also build the system so that we are easily able to roll back in the event of an emergency. From a development standpoint, our Agile approach with a change management protocol will allow us to make incremental changes and catch anything in the system that is not working as intended or should be improved. After implementation, the IT department and the integration team will continue supporting the district through a series of in-person and virtual training so that everyone is comfortable with the changes moving into the new academic year.

We do expect this project to roll out very smoothly given the expertise of the department, but roadblocks inevitably can occur. We will remain fully transparent with the board throughout the entire process and with each milestone. We are confident that this implementation will yield significant benefits and return on investment to the district, our staff, and our students and encourage you to allow us to move forward with this project.

Thank you for your time and consideration for the grant allocation. I would be happy to entertain any questions at this time.

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