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Exploring the Potential for a Student-Based Software Development Team

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Exploring the Potential for a Student-Based Software Development Team
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Haenicke Institute for Global Education
Academic Leadership Academy 2018-2019

Introduction
In the 2017-2018 academic year, the Haenicke Institute worked with a team of Computer Science students to develop an application management system for the International Education Faculty Development Fund (IEFDF).

This system was developed as part of the students’ Senior Design Project. It was a mutually beneficial relationship in that the students gained experience working on developing actual production software and the Haenicke Institute received a modernized and time-saving system for IEFDF applications.

After the conclusion of the IEFDF project, one of the student developers was further contracted to build another system: the WMU Global Expertise Database. Using the framework developed for the IEFDF system, this new database was able to be developed and deployed quickly.

The student eventually graduated and the Haenicke Institute was left with two sleek new systems, but no one to maintain them. This situation is not unique at WMU. Many departments and those that supported more than 125 WMU staff members were more likely to have a developer on staff, roughly 1 out of 3 smaller departments also had their own developer.

Survey Results
An informal survey of WMU Tech Professionals was conducted to learn about current software development needs on campus and gauge interest in a student development team.

Does your IT Department have a programmer/developer on staff?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td>40%</td>
</tr>
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</table>

Sixty Percent of respondents indicated that their department had a developer on staff. Further analysis showed that while larger IT departments and those that supported more than 125 WMU staff were more likely to have a developer on staff, roughly 1 out of 3 smaller departments also had their own developer.

For departments that have a developer on staff, what is the demand for their work?

<table>
<thead>
<tr>
<th>Somewhat demanding</th>
<th>Very demanding</th>
<th>Extremely demanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>52%</td>
<td>23%</td>
</tr>
</tbody>
</table>

The demand for development work on campus is high with 74% of respondents indicating that demand for their staff developers work was either “Very demanding” or “Extremely demanding”. No responses were collected for “Not very demanding” or “Not demanding at all”.

What types of development/programming does your department have a need for?

- Web Applications
- Mobile Applications
- Desktop Applications
- Business Intelligence, Analytics and Reporting
- Database
- Maintenance of existing applications
- Business Applications

The development of web applications and maintenance of existing applications were tied for most common type of development needed. This shows that while development of modern web-based applications is in high demand, maintenance is just as big of a concern.

What factors prevent your department from doing more development work?

- Lack of time
- Lack of skill base among current staff
- Lack of funds to contract with non-WMU/3rd party developers
- No demand/Not applicable

When asked about their interest level in utilizing a potential student development team 70% of respondents indicated they were at least somewhat interested. The results were similar whether the department had a developer on staff or not.

Additional comments received in the survey:

“I’m pro student experience, and in favor of utilizing student development skills for campus needs. Though more guidance is required, the total value per dollar to departments is high and our students get real experience - which is a valuable thing to add to their resumes (along with their degree from WMU). I call that a win-win.”

“It’s a great idea, one that I have asked about why we don’t do more. Keep pushing.”

The results of the survey led to following conclusions:

- There is unmet demand for development work on campus
- Maintenance of existing applications is needed just as much as development of new applications
- Overall interest level in a student development team is high

Next Steps
To implement a student development team the challenges above will need to be addressed. Identifying possible startup funding sources will be a priority. Once the team is running, maintenance contracts for existing and new software may be the solution to long term funding.

Based on the survey results, interest in utilizing this group is high. Project sponsors who are willing to work with the student team to develop software for their areas will be sought out.

Finally, there is a large amount of talent already present in the tech professional community at WMU. Finding volunteers willing to lend their time and advice will be key in solving skill gap, managerial, and retention challenges.

Challenges
Although interest and demand for a student development team appears high on campus, there are several challenges that need to be overcome to bring the idea to fruition:

1. Startup Challenges
   - Funding - The biggest issue in starting this team is funding. It will likely take 1-3 years for the team to build a client base and generate enough revenue to cover its costs.
   - Workspace – The team will need a space where it can work efficiently and be provided with the necessary equipment and software to develop on.
   - Student Training – Students will need to learn best practices for a team-based approach to developing software.

2. Sustainability Challenges
   - Funding – once startup funding is exhausted the team will need to be self-sustaining. Project income alone will likely not be enough.
   - Skill Gaps – As projects increase in complexity, there may be projects that the group is asked to work on where the students do not yet have the required skills.

3. Student Retention Challenges
   - Wages – Students with programming abilities may be able to find 3rd party internships with better pay.
   - Interest – Projects for university departments may not hold the students’ interest.

Credits and Contact Information
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