LGFCU Excellence in Innovation Award Project Evaluation

Project ID	GG-10
Title of Program	Virtual Resource Manager (VRM): Employee Terminations
Program Category	General Government
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FLSA Designation	Non-exempt
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Description of Productivity Improvement

VRM (Virtual Resource Manager) Termination Module is an in-house developed system.

While on-boarding is a popular topic in organizations that employ a number of people, often terminations, especially uneventful ones, are given short-shrift and treated as an after-thought, if at all.
As a result, terminated employees may remain as active users of systems, and it's even possible that assets assigned to the employee are never returned. Lingering legacy accounts are not just a housekeeping issue. Failure to disable network accounts or forgetting about separate accounts to social
media or cloud resources is leaving the barn door gaping open for all sorts of mischief. At the heart of the matter, it's a security issue.

But why is a system necessary? At some point Human Resources is surely notified. Should Human Resources notify the MIS department, or is it the responsibility of the terminated employee's department? There's also the matter of remembering with any degree of detail what the employee had
access to so that details can be provided on what to revoke.

While policy would dictate timely notifications all around, the VRM program provides processes to support county policy. At Pitt County, each department has an IT liaison, so putting tools in their hands
to empower them to close the loop on a termination was a logical extension.

The VRM system prompts the liaison through collecting a proximity card, county mobile devices, reset voicemail, transferring phone, and reminding about stopping county cell phone stipend, if applicable. The liaison may remove the terminated employee from a workgroup and then VRM spawns requests to
the MIS Department's service request system to terminate the employee's access to each of the systems
in the workgroup. To cover any bases that might be missed, an automated process is set up that checks
for termination dates entered in the County's payroll system (MUNIS) and it checks for any lingering security to systems and revokes accordingly.

Having the system secured to specific, authorized personnel ensures that notifications are official and deliberate, not a forwarded email akin to hear-say.

The system was developed by an in-house programmer using Microsoft Visual Studio ASP.NET and SQL
Server as its foundation. It runs in a browser window with a clean, easy to follow interface. As mentioned, it ties into databases of other in-house systems to leverage the power of what we already have on file about an employee who is being terminated. VRM has proven to be a tool that once implemented, staff wonder how they ever managed without.

Description of why this project was initiated

An Infosecurity Magazine headline shouts, "One in Three Ex-Employees Can Access Corporate Networks." In a 2016 report, an IT Security vendor cites two recent court cases that highlight the range of threats posed by insiders even after employees had already left their employment: "In the first case, an IT manager who left a company in North Carolina admitted to accessing his former employer's servers three months after he left. He deleted large amounts of information including some of the firm's intellectual property. In the second case, a system administrator who was terminated from his job at a large manufacturing facility remotely accessed the plant's computer system and intentionally transmitted code and commands which resulted in significant damage to the plant's operations."

The proposed solution is that "the IT department and HR must coordinate and communicate constantly and closely to ensure that IT follows policies of terminating employees' access to networks when they leave the company." (Source: https://www.nuix.com/blog/what-happens-when-former-employee-stillhas-insider-access)

Using VRM as the coordination and communication mechanism between departments and IT levels the field and standardizes the process so that terminations are handled countywide with a degree of integrity and efficiency not previously realized.

Quantifiable results (sustainability, cost savings, cost avoidance and/or a higher level of service). Indication of what resources were used and what was done with any accrued time savings

Since implementing VRM's termination module, staff members are no longer in a reactive mode, stumbling across lingering active accounts months or years after an employee has left. Pitt County recently went through a security audit that we commissioned to highlight vulnerabilities or areas we could improve. Oftentimes we find ourselves searching for tiny holes to plug with expensive, high-tech solutions, protecting us from the viruses and malware from the outside, while overlooking gaping opportunities for security breach fully within our power to address.

The cost avoidance of a security breach is the primary quantifiable benefit from the use of VRM termination module. According to cyber security legal experts, "The cost of an incident is not limited to the dollars spent to investigate and remediate the incident and possible subsequent litigation; it extends to the incalculable cost of regaining lost citizen trust." (Source: http://www.vedderprice.com/state-localgovernments-at-risk-how-public-entities-can-reduce-risk-of-data-breach/)

The expert offers an example of the type of penalties that could be incurred through a security breach: "As a result of these and numerous other incidents involving public governments and agencies, there is a growing trend toward public entities facing fines and penalties. After a breach involving the protected health information of 1,581 affected individuals, the Skagit County of Northwest Washington recently agreed to a $215,000 monetary settlement with the U.S. Department of Health and Human Services, Office for Civil Rights and agreed to enter into a corrective action plan. In announcing the settlement, the OCR noted that "This case marks the first settlement with a county government and sends a strong message about the importance of HIPAA compliance to local and county governments, regardless of size." The OCR further cautioned that state and local governments are not immune from future enforcement actions and that the "agencies need to adopt a meaningful compliance program to ensure the privacy and security of patients' information."

VRM streamlines and automates portions of the process of off-boarding, saving staff time, and improving communication between departments, Human Resources, and Information Technology staff.

While proper handling of system security surrounding employee termination is just one piece of an admittedly large security puzzle, it is one that was discussed with palpable concern at the Spring North Carolina Local Government Information Systems Association (NCLGISA) symposium which focused on security issues. Numerous counties and municipalities admitted they were aware of the lack of communication between departments, HR, and IT, leaving the organization vulnerable. The VRM system has bolstered Pitt County's confidence that employee terminations are handled efficiently and thoroughly.

Other descriptive information

VRM (Virtual Resource Manager), as a whole is "a web application designed to provide a mechanism for the cataloging and management of user application security through workgroups." VRM includes the following functions:

- New Employee (Onboarding)
- Terminate Employee (implemented in May, 2015)
- Employee Resources
- Employee Workgroup Assignments
- Reports
- Coming soon: Relocations (to be implemented in 2016)

Screen-shots available as *.jpg files.