



March 2013

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ROI CASE STUDY

BMC FOOTPRINTS

DUKE ENERGY

THE BOTTOM LINE

Duke Energy deployed BMC FootPrints to manage all its network assets and systems that run and support the company's public grid infrastructure. Nucleus found that the company was able to ensure North American Electric Reliability Corporation (NERC) security standards compliance by standardizing and automating workflows.

ROI: 242%

Payback: 5 months

Average annual benefit: \$396,747

THE COMPANY

Duke Energy is the largest electric power holding company in the United States, serving 7 million electric customers and 500,000 gas customers. The company has approximately 58,200 megawatts of generating capacity from a diverse mix of coal, nuclear, natural gas, oil, and renewable resources. Headquartered in North Carolina, Duke Energy employs roughly 30,000 employees and has approximately \$14.5 billion in annual revenues.

THE CHALLENGE

As part of the critical power infrastructure of the United States, Duke's grid is regularly audited by the North American Electric Reliability Corporation (NERC) and Federal Energy Regulatory Commission (FERC) to ensure physical and cyber security risks are minimized. On an ongoing basis, Duke has to show that it is taking appropriate steps to secure the grid. This means continually collecting information on who has access to both physical assets and software systems and any changes that are made to the infrastructure. Although Duke had implemented an asset management application, much of the reporting was manual and policies and procedures were documented on an ad-hoc basis by individuals on the infrastructure team.

"Policies and procedures change, and we're always updating the way we handle things. If we didn't have FootPrints, it would be a triple effort to keep up with everything, and we'd need different skills and different people to manage it."

- Jacque Donald, systems engineer, Duke Energy

Increasingly complex policies and requirements drove the company to look for a more comprehensive solution that would not just track assets but automate workflows and reporting to make compliance less labor intensive.

THE STRATEGY

After doing its due diligence on available software, Duke selected BMC FootPrints because:

- FootPrints could support the complex business processes and workflows Duke had to follow and support the needs of its cross-functional teams when provisioning or patching software.
- The reporting capabilities within FootPrints would enable Duke to more rapidly develop and deliver the audit data it needed to show NERC compliance.
- Duke felt FootPrints was the most comprehensive solution available that could handle the volume of data it needed to track and manage on physical and electronic assets, site and infrastructure access, and users.

Duke has approximately 25 people on an internal team that are responsible for managing the grid infrastructure. Two people spent about 80 hours in total over a 2-month period to implement the software, migrate the existing data, define the workflows, and test the application before it went into production. Duke started with a self-service service desk and, as the project expanded, separated the internal service desk (which tracks more than 1,000 tickets a month) from the asset management application. Duke has four systems administrators that support FootPrints on a part-time basis. FootPrints tracks all of Duke's NERC-related electronic and physical access points and transactions, and handles change controls, security controls, and patching compliance.

**Cost : Benefit
Ratio | 1 : 2.3**

KEY BENEFIT AREAS

Standardizing on FootPrints has enabled Duke to automate processes and grow while ensuring it meets critical security and access requirements. The main benefits of the project included:

- Increased productivity. Automation of workflows and reporting has enabled Duke to eliminate many of the manual tasks that were required without FootPrints, enabling Duke to avoid hiring additional members of the infrastructure team while supporting significant growth. In addition, because the information is automatically collected, it

meant that FootPrints becomes a knowledge system for easier collaboration but also a collection of tribal knowledge (in the case someone leaves the organization).

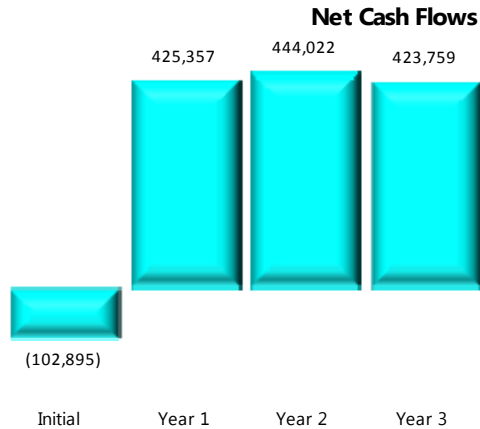
- Improved audit management. Without FootPrints, it would have traditionally taken a month (or more) for the team to collect the information need to ensure compliance. With the deployment of this solution, it now takes two people only a couple of weeks.
- Reduced risk of noncompliance. Because of Duke’s critical role in supporting the national grid, fines for noncompliance could cost the company \$1 million a day. FootPrints reinforces the policies Duke needs to follow for compliance and provides complete audit trails, so Duke no longer has to rely on the actions or knowledge of individual team members to ensure compliance.

Types of Benefits



KEY COST AREAS

Costs of the project included software, hardware, consulting, training, and personnel. The largest cost area of the project was personnel to support FootPrints, which is not surprising given the critical role the application plays in supporting Duke’s approach to service management.



BEST PRACTICES

Duke uses FootPrints to ensure compliance and the automated workflows ensure there is no opportunity for error. Because of this automation, Duke can be assured its policies are being enforced on a consistent basis, and no one person or team has to have an expert on the entire company’s processes and policies. This has enabled Duke to grow and also

positions it to better integrate acquisitions because new IT groups can be rapidly brought up to speed.

CALCULATING THE ROI

Nucleus calculated the costs of consulting, personnel, and training over a 3-year period to quantify Duke Energy's investment in its deployment of BMC software FootPrints. Direct benefits quantified included the cost avoidance of additional infrastructure team members that would have been needed to support report building needs if FootPrints had not been implemented and a conservative estimate of the potential loss a minor noncompliance issue would have cost Duke in fines. Indirect benefits quantified included the productivity savings of the infrastructure team and were calculated based on the average annual fully loaded cost of a staff member.

FINANCIAL ANALYSIS

BMC FootPrints

Annual ROI: 242%

Payback period: 0.4 years

ANNUAL BENEFITS	Pre-start	Year 1	Year 2	Year 3
Direct	0	474,000	474,000	474,000
Indirect	0	218,466	218,466	218,466
Total per period	0	692,466	692,466	692,466

CAPITALIZED ASSETS	Pre-start	Year 1	Year 2	Year 3
Software	83,580	22,112	8,142	25,818
Hardware	10,000	0	0	0
Project consulting and personnel	0	0	0	0
Total per period	93,580	22,112	8,142	25,818

DEPRECIATION SCHEDULE	Pre-start	Year 1	Year 2	Year 3
Software	0	16,716	21,138	22,767
Hardware	0	2,000	2,000	2,000
Project consulting and personnel	0	0	0	0
Total per period	0	18,716	23,138	24,767

EXPENSED COSTS	Pre-start	Year 1	Year 2	Year 3
Software	0	28,997	24,303	26,890
Hardware	0	0	0	0
Consulting	0	0	0	0
Personnel	4,154	216,000	216,000	216,000
Training	5,162	0	0	0
Other	0	0	0	0
Total per period	9,315	244,997	240,303	242,890

FINANCIAL ANALYSIS	Results	Year 1	Year 2	Year 3
Net cash flow before taxes	(102,895)	425,357	444,022	423,759
Net cash flow after taxes	(98,703)	232,418	250,960	232,594
Annual ROI - direct and indirect benefits				242%
Annual ROI - direct benefits only				120%
Net Present Value (NPV)				527,574
Payback period				0.4 years
Average Annual Cost of Ownership				295,719
3-Year IRR				233%

FINANCIAL ASSUMPTIONS

All government taxes	45%
Cost of capital	7.0%



NUCLEUS
RESEARCH

By the Numbers

Duke Energy's BMC FootPrints project



Annual Return
on Investment **242%**

5.0 months
The total time to value, or
payback period, for the project

Cost : Benefit
Ratio **1 : 2.3**

\$396,747
Average annual benefit

THE PROJECT

Duke Energy deployed BMC FootPrints to manage all its network assets and systems that run and support the company's public grid infrastructure. Nucleus found that the company was able to ensure North American Electric Reliability Corporation (NERC) security standards compliance by standardizing and automating workflows.

THE RESULTS

Increased productivity by 6 percent
Avoided fines for noncompliance
Avoided 3 FTEs

Number of **users: 35**

2 Months
Total time for Duke Energy to
deploy BMC FootPrints

"If we didn't have FootPrints, it would be a triple effort to keep up with everything, and we'd need different skills and different people to manage it."

- Jacque Donald, systems engineer, Duke Energy