

HOW TO MERGE BUSINESS ANALYTICS AND INFORMATION SYSTEMS CURRICULUM?

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ABSTRACT

This paper discusses how to integrate business analytics into information systems programs at the undergraduate level. There are both challenges and opportunities for such integration.

Keywords: Curriculum Development, Business Analytics, Information Systems

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INTRODUCTION

Curriculum design is an ongoing process [1]. This design needs to be open and flexible to accommodate new requirements of the business world and student expectations [8]. Information systems are one of the business areas that need constant adjustments in terms of curriculum design [10]. Computing languages are evolving, and what used to be a popular language a decade ago receives less use now and potentially is replaced with another language [2]. The new challenge is to integrate business analytics into information systems. Business analytics (BA) area is growing and many information systems (IS) programs are looking for ways to integrate business analytics in their program to adopt new reality [3]. In this article, we examine the benefits, opportunities and design perspectives of integrating business analytics into IS programs.

INTEGRATING BUSINESS ANALYTICS INTO INFORMATION SYSTEMS

Some of the fundamentals of Business Analytics are statistical learning, data analysis, interpretation, visualization and communication, best practices in analytics, and software use and development [4]. Apart from a higher level statistical understanding, a regular major in information system curriculum even at an undergraduate level provides a significant coverage in software management and database management [6]. With additional coverage in lieu of or in additional traditional areas of information systems, business analytics materials can be supplemented to the program. This would allow students at minimum to develop understanding and exposure to the growing field of business analytics. A more in depth coverage as a part of the information system core would mean less coverage in traditional information system areas such as networking, web site design, systems management and etc. In certain cases, this can be a good replacement for students.

In many information systems programs, a programming language either procedural or object oriented is included [6]. A highly popular Python which shows dual purpose for both business analytics and information systems can be used as the primary language for the program or in addition to traditional programming languages such as Java or C++ [5] [9]. Python is gaining traction not only for statistical and machine learning purposes but for general purpose uses [7]. Similarly, courses in database management give good preparation for both business analytics and information systems. Course coverage in SQL language would be very valuable for both areas [11]. Additionally, data visualization, text/web mining, and data warehousing are common areas for Business Analytics and Information Systems.

More complication arises in choosing the right direction for the IS program in terms of what could be added on the top of a programming language and database course(s). A direction to extensive statistical theory coverage would leave less room for other traditional areas of IS. A more mechanical/practical side of the business analytics such as developing neural networks, machine learning mechanism and similar areas would be much easier to integrate to the IS programs. For instance, machine learning can be developed using Python which can be more popular among IS students compared to a course in Time Series. A web scrapping where students learn collecting large scales of data can be also an example, where IS and BA intersects each other. Networking can be still useful for both areas, if it is designed to

integrate BA concepts and managing mainframe data access. Many IS areas such as cyber security can be application areas of a combined BA and IS program.

CONCLUSION

Business Analytics provide a significant growth opportunity for any Information Systems program. Depending on the direction an IS program wants to lead, BA can provide anywhere from elective courses to a fully integrated program between BA and IS.

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