

# University Predictive Model

## MARKET BRIEF

*"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change."*

We live in a world of constant change and increasing competition. Colleges and universities on every continent have to deal with the ongoing pressure of balancing funding, tuition, competition for students and quality of education and/or research while still reaching their growth and overarching educational and global community goals. Not an easy job to do.

Although we don't have a crystal ball to see into the future, we can model a variety of scenarios and determine the likely impacts on the university business. These powerful, agile and easy to use models provide quick answers to any number of future focused questions.



### Using the Past to Predict the Future

Pilbara Group has developed a methodology specifically for higher education institutions that captures the knowledge of detailed historical analysis and projects it forward to provide insight into the likely outcomes of various "what if" scenarios.

This methodology is based on Pilbara Group's experience in successfully developing similar models for private industry and the US Military. Leaders are able to make more accurate decisions based on real information as opposed to intuition, or worse yet, wrong information.

Our University Predictive Model provides a holistic view of the university including a detailed Faculty and School profitability assessment based on the changes to student numbers (including new courses and programs), as well as the impact on the university's bottom line as a whole.



### Top Down Versus Bottom Up

University cost models have been around for decades. They are historical 'Top-Down' models that utilize a range of source data to build a view of the university.

Pilbara Group's University Predictive Model is a 'Bottom-Up' model. It uses the mathematical correlations identified in the historical cost models to determine the relationships between changes in student numbers and the various resources required to support those students and produce the necessary university outcomes. It allows university management to determine not only what the various schools and faculties require in personnel and financial resources to deliver the required teaching and research load, but also what support will be required (and at what cost) within the overhead and corporate areas of the university. We are able to use existing historical cost models from the university's records or create them from available university data sources.

# University Predictive Model

## How We Do It

Our solution requires the combination of many disparate data sets into annual historical cost models. This includes data from the university's financial, human resources, student enrollment, asset management, and timetabling systems. Plugging that data into cost models is part of the Pilbara Group solution as the raw data is normally readily available within the University's information systems. Our models initially incorporate high level business rules or parameters that the various schools and faculties refine over time.

Once the models have been finalized, they feature a range of fully costed products including Commercial, Research, and Teaching, with teaching products being costed down to all courses and programs offered by the

university. As a result, these models include detailed "cause and effect" relationships that can be tested and validated inside the organization. Once this historical baseline has been established, we conduct advanced mathematical analysis to identify resourcing and support / overhead changes over time based on volume/quality metric changes. These change relationships can be expressed as mathematical algorithms. These algorithms are then used to create the predictive model and express the fundamental cause and effect relationships in the historical models coupled with its fixed and variable components to provide an excellent forecasting capability.

### The predictive model can estimate the impact of:

- Changes to student numbers
- Adding new programs / courses
- Removing courses / programs
- Salary increases
- Changes to:
  - Government funding rates
  - Domestic student fees
  - International student fees

### The predictive model analyzes the results by the estimated financial and human resource requirements as well as by:

- Funding type
- Academic career type (undergraduate, postgraduate, higher degree by research, etc)
- Student type (Government Funded, Fee Paying International, Fee Paying Domestic, etc)
- Campus
- Delivery type (on campus, online, offshore, etc)
- Profitability / margin / break-even point

The methodology that forms the backbone of the predictive model can be tailored specifically to your university. The potential to model a range of different scenarios is limitless.

## The Pilbara Group Advantage of Multi-User / Multi-Dimensional / On-Demand

A major advantage of using the Pilbara Group solution, ACE on-Demand, is that all the historical models and predictive models are built using the same software.

ACE on-Demand is a hosted software solution that allows multi-dimensional models to be developed that can be used by several people simultaneously. This is particularly useful if you have multiple campuses spread across your local area, across the country or around the world. Because the solution is a hosted solution, universities don't need to worry about procuring, installing and maintaining the software, let alone purchasing the additional hardware required for it to sit on. This is managed by Pilbara Group's expert IT team and all data is held in secure, state of the art data centers in Australia or the United States.

Another major benefit is that our expert consultants are only an email or phone call away and can instantly access and rectify any problem you may have no matter where you are located. Pilbara Group currently serves clients in the United States, Australia, Mexico and the United Kingdom.

## Let's Get Started

Having the advantage of fully understanding the impact of a changing world on your organization can make all the difference in your future performance – and success. We offer a preliminary Scoping Study where we identify what information you have available, what is usable and the political climate of your organization. Based on our conversations with you we also determine what you need, what you don't have, and what would make the best model for you. As a result, a Scoping Study saves you time and money and ensures you get the very best product. Talk to us today so that we can show you how quickly we can provide a predictive model to detail your organization's future performance and profitability.

**The world is changing rapidly, don't look to a crystal ball for your future.**  
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