

# Supply Chain SOURCE



Special Edition The 6th Annual Masters/MBA Case Competition

## Managing Health Care Supply Chains in Gombala



Schools from across the US and around the globe were invited to send student teams to compete for prize money based on their comprehension, analysis and presentation of an executive level problem case for our **6th annual global**

**supply chain conference and case competition event.** The never before seen case, written by Center Director Dr. Ananth Iyer, emphasized the conference theme of **Unleashing the Global Supply Chain.**

The student competition consisted of two phases; the 1st phase served as virtual elimination round to narrow down the pack of those 23 registered teams to an elite group of 6. In the 1st round, teams are presented with a case problem in which they are asked to submit a PowerPoint slide presentation of their recommendations. These recommendations are then judged by a blind panel of academic evaluators on the basis of strategic vision, practicality of implementation, use of quantitative analysis, to develop a strategy, consideration of resources, and overall solution viability. Only 6 teams are invited to participate in the 2nd phase.

The 2nd phase of the case competition began February 11th 2011, the Thursday night before the conference, and provided student teams with

new case materials, questions and problems for the team to reconsider as they build on their 1st phase case presentation. All invited teams worked through the night to develop their new problem solution and prepare tirelessly to present the new solution before the panel of industry judges and all conference attendees on February 12th..

### **Background**

This year's case placed students in the far off land of Gombala where Global Health (GH) supply chain logician, Nick Van DeCamp laments how best to approach serving this country with dire needs for healthcare.

Student teams must help Nick balance the demands of his donors – focused with eradicating world health issues, but tying up their dollars with a broad range of sometimes difficult operational constraints - with the practicalities of getting the right medicines to the right communities, at the right inventory levels, the fastest, and cheapest. Teams had to consider the difficult task of how to keep donors happy while also optimizing the health care supply chain, in this remote location with pressing humanitarian needs.



Competitors comprised, the 6 finalist teams in Phase II





## ***Gombala – the country context***

Gombala is a country with a population of about 8 million people. The country can be divided into three regions – an urban core region with 4 million people centered around the capital city of Gomba, and two regions – the Eastern and Western regions – each with 2 million people spread out over a rural region.

Gombala has a rich cultural heritage and an archeological and paleontological history spread over several centuries. Recent cave finds suggested that further exploration may well establish it as the cradle of all mankind and force a revision of existing theories regarding the development of man. The economic realities of Gombala were stark, with the per capita GDP putting the country in the group of five that were at the bottom of the global list. With such a poor income stream, modern health care was virtually absent – unless donors provided the funds, medicine and equipment. In practice, around 90% of health care funding was provided by donors. Despite such efforts, infant mortality (survival until age 5) was about 25% for Gombalans – a shocking figure for most of the rest of the world.

## ***Case Synopsis***

Nick Van DeCamp wheeled his bike into the elevator and pulled into his office. He parked his bike, pulled off his helmet and sat down, feet up on his desk staring out the window at the mountains surrounding him. Boulder, Colorado was a haven for the earth friendly, global traveler that Nick was – his NGO – Global Health (GH) had earned a reputation for respecting the needs of the countries it operated in

and negotiating the intricacies of donor constraints.

Nick was focused on Gombala for the next few months – and his partner in his efforts was the Head of the Ministry of Health in Gombala – Adbou Diallo. Adbou, as he preferred Nick call him, was passionate about improving health outcomes in Gombala and determined to create an environment where excellence in delivery would enable every donor dollar to go far.

Gombala has five main donors – USAID, EU, JAPAN, DFID and the GLOBAL FUND –each of which represented the governments of the United States, the European Union, Japan and the U.K. as well as Public/Private Donor partnerships. Each of these donors contributes approximately 20% of the total funds provided to the country. However, each of them add constraints to reflect their approach to managing effective use of their funds.

There were many possible constraints on the funds allocated by an individual donor. Some donors provide funds in monthly increments, one month of funding at a time. Others provide funds in quarterly buckets and still other in six month buckets. In each of these cases, the funding is provided at the start of the period for use the upcoming period. While these constraints guaranteed that the funds would be available over time and not get used up immediately, they sometimes create difficulties, particularly when a large disease outbreak requires a quick infusion of funds in one month. In other cases, these constraints interact with other constraints placed by the donor to further restrict effective





deployment of funds.

Nick knew that he would never be able to get all donors to share their constraints in a common forum. But he realized that he needed to educate donors of the impact of their constraints on health outcomes. He thought of using DALY (Disability Adjusted Life Years) as a measure and, using data from the World Health Organization site ([http://www.who.int/topics/global\\_burden\\_of\\_disease/en/](http://www.who.int/topics/global_burden_of_disease/en/)), he took the data for Sierra Leone as a proxy for Gombala. He wondered how he could pull the data and through the use of a model, show how donor constraints impact health for Gombalans.

Historically, all funding was provided to the Ministry of Finance of Gombala. This unit coordinated with the Ministry of Health to purchase drugs and medical equipment to deliver them to hospitals as per requirements. Key decisions included contract prices, selection of specific drugs used to treat each of the diseases and the purchase quantities against demand forecasts. One change that had been implemented in Gombala, based on studies done by the World Bank sponsored researchers, was to decentralize purchasing into separate decisions by each of the three regions of the country.

In effect, Gombala had three separate purchasing organizations, one for each region. They made separate purchasing decisions, carried separate drug inventory and satisfied demand only for their region. **Nick wondered if it was time to recommend centralized purchasing or if there was some other way out?** Not only is Nick concerned with the supply chain of medical supplies,

donor transparency, providing more than adequate care but he now has to contend with his good friend Adbou's announcement.

*"From today onwards, all children below the age of five and all pregnant women will be entitled to free health care at any clinic in Gombala. Free means you pay nothing – for tests, for treatment, for medicine. I thank the citizens of Europa (a European country) for its generosity in funding this initiative. I look forward to the day when we will offer a quality of health care that will be accepted as a world standard for a developing country such as ours."*

Nick had also been told that while Europa had committed to assist, the constraint was that Gombala's Ministry of health would have to create a forecast of medicines required in each sub region and its hospital. This information would be sent to the UNICEF central medical procurement in Copenhagen. UNICEF would then pick and pack the medicine and ship it directly to the sub region. Adbou and Nick worried about what would happen to resources available at hospitals and ...

***If many patients stopped paying, would these volunteers go away? What about the midwives who supervised deliveries? Who would pay them if the patient refused? Would availability of midwives decrease and thus lead to more medical emergencies?***

*This is an excerpt from the case written by Professor Ananth Iyer, Susan Bulkeley Butler Chair in Operations Management at the Krannert School of Management, Purdue University. It is meant solely as a vehicle for teaching, learning and class discussion. The data and details provided in the case are completely fictitious.*



*1st Place Team Indiana University*



*Patrick Brunette, Caroline Storey, Matthew Hutchens and Ben Cober*

*2nd Place Team Purdue University*



*Jing Wang, Saketh Chinni, Deepti Nair, and Brandon Strum*

*3rd Place Team Northwestern University*



*David DeSandre, Nick Howerton, Deepak Ponnawolu and Will Conrad.*

## *2011 DCMME/GSCMI MBA Case Competition Highlights*



*Team GameCocks from University of South Carolina*

Students were challenged to apply private sector supply chain knowledge to a public global health program. This case appeared to be especially interesting to students as not only did it tie in operations and supply chain knowledge, but also tackled a real world problem faced by many developing countries.

In the presentations phase, a panel of industry professionals judged students on a ten minute presentation that built upon their Phase 1 submissions. The case teams impressively created comprehensive and creative solutions in a short 24 hour period before presenting

*“I applaud the organizers for using a case devoted to the very real issues of global healthcare in least-developed and developing countries. These challenges and complexities can benefit greatly from the practical application of Supply Chain theories. I am hopeful that exposure to this topic will prove inspirational to students on all the participating teams as they consider how their academic knowledge and training can impact significant global issues,”***Tamara Russell, supply chain consultant for Eli Lilly and Company, case competition judge.**



*Judges panel reviewing the scoring with MBA Student Maia Shaw*

On behalf of the DCMME & GSCMI Center we thank all of the participating teams:

China Europe International

Drexel University (2)

Indiana University (2)

Massachusetts Institute of Technology (MIT)

Northwestern University

Purdue University

University of Maryland

University of California, San Diego (2)

University of Illinois at Urbana-Champaign

University of Michigan (2)

University of Rochester

University of South Carolina

University of Southern California (2)

University of Virginia

University of Wisconsin-Madison

Vanderbilt University (2)

Washington University St.Louis

