



CASE STUDIES

Major Disruptions to University Operating Models

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In the following report, Hanover Research presents the results of a case study analysis of disruptions to university operating models, specifically highlighting the financial and operational impact on universities and their associated responses.



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EXECUTIVE SUMMARY

KEY FINDINGS

Among examined cases, natural disasters tend to result in the most acute financial shortfalls due to concomitant infrastructure damage and prolonged enrollment gaps.

Case studies with the largest revenue impacts occur when a university had to finance significant infrastructure reconstruction (e.g., Hurricane Katrina, Tohoku Earthquake) or when a university was forced to close for an extended period. Tulane University encountered both situations when Hurricane Katrina caused significant damage and forced the university to close for the entirety of the fall semester. Events in which the university only had to close for a couple weeks or was able to continue with online classes did not appear to result in a significant financial shortfall of lasting duration, assuming the institution did not also experience physical damages.

To address severe financial shortfalls, institutions have historically reduced academic and other campus programs.

Tulane University, with at least \$200 million in damages from Hurricane Katrina, experienced the greatest hardship and financial shortfall of all profiled institutions, many of which were able to continue operating via reduced or alternative methods during their experienced disruptions. As a result of its financial deficit, Tulane was forced to eliminate some academic and sports programming, and lay off a number of faculty and staff. However, Tulane was able to resume much of its past programming as soon as two years following Katrina.

Universities communicate with students frequently during periods of crisis.

To ensure that students can quickly access operational information, profiled universities generally establish special websites for the publication of crisis-related policy updates. Universities also collaborate with partners and peers to ensure that studies can continue without significant interruption. For example, the Japanese government provided funding to international students in the wake of the earthquake and tsunami, while Tulane University worked with other universities to ensure that displaced students would not have to pay higher tuition than they typically would in normal circumstances.

Profiled universities prioritize both community and campus recovery.

Despite their own hardships and shortages, a number of profiled institutions still aided in community recovery efforts. Hong Kong Baptist University helped develop online teaching platforms during the SARS outbreak, while Tohoku University contributed to community reconstruction projects in the wake of the Japanese earthquake and tsunami of 2011. Similarly, Tulane developed a Center for Public Service and implemented a new service learning requirement. These institutions recognized the difficulty in resuming normal campus operations while the surrounding community was still severely impacted by disaster.

RESEARCH QUESTIONS AND METHODOLOGY

BACKGROUND

Due to recent disruptions resulting from the outbreak of the COVID-19 virus, University A projects that it may experience a significant revenue shortfall. To help it understand options for handling this shortfall and other associated effects of the COVID-19 virus, Hanover Research conducted an analysis of institutional responses to past crises (e.g., violence, natural disasters, pandemics).

METHODOLOGY

To answer University A's research questions, Hanover compiled a series of case studies examining select global crises and impacted universities' responses. In developing this assessment, Hanover relied on newspaper articles and university websites or press releases dated from the period of the crisis. Hanover selected the case studies included in this report based on institutional characteristics.

Operational Disruption	Institution
Hurricane Katrina	Tulane University
Japan Earthquake and Tsunami of 2011	Tohoku University
SARS	Various global institutions

The appendix also provides examples of additional global crises and associated university response plans or policies.

RESEARCH QUESTIONS



What are cases of crisis situations (e.g., threats of violence, natural disasters, pandemic) that have led to revenue shortfalls at universities?

How did profiled universities respond to these crises and the associated financial shocks?



If available, how long did profiled crises last?

HURRICANE KATRINA – TULANE UNIVERSITY

OPERATIONAL IMPACT

Hurricane Katrina resulted in significant damages to Tulane University and other Louisiana institutions, forcing them to significantly rethink operations immediately following the disaster.



Academic:

Tulane was forced to **cancel** its Fall 2005 semester and associated enrollments, though nearly **90 percent of undergraduates** returned for the spring semester.



Community:

Tulane was the **largest employer** in New Orleans, meaning that any effect on university operations had a significant impact on the greater community.



Financial:

By the end of 2005, Tulane had already assessed at least **\$200 million in damages**.

Crisis Duration

Administrators appear to have largely mitigated the negative impact of Hurricane Katrina on Tulane University's operations by 2007, indicating a recovery period of approximately two years.

- In Spring 2007, Tulane developed a new **Engineering Physics major**, the first new engineering program since closures from Katrina. The institution has also reintroduced eliminated **programs** in fields like computer science and mechanical engineering, though some fields like civil engineering and exercise science are still unavailable.
- In Fall 2007, Tulane enrolled **1,375 first-year students**, exceeding its goal of 1,200 students. However, Tulane did not return to pre-Katrina enrollment levels until **Fall 2011**.

UNIVERSITY RESPONSE

Following the disruption of Hurricane Katrina to Tulane's fall semester, the institution managed to develop a **Renewal Plan** by the end of 2005.

Academic

- Tulane **encouraged students** to complete the fall semester at other universities, accepting credits from any accredited institution.
- Tulane was forced to **eliminate five undergraduate programs** beginning in the Spring 2006 semester, predominantly in engineering fields.

Community

- In recognition of New Orleans' reliance on Tulane and vice versa, the Renewal Plan included a significantly larger number of service learning opportunities and required public service graduation requirements.
- Tulane also established a new Center for Public Service.

Financial

- To manage the damages, Tulane decided to enact a series of resulting **budget cuts** totaling approximately \$100 million.
- When accepting stranded Tulane students in Fall 2005, many universities either **waived tuition** (as Tulane had already collected fall tuition) or returned tuition collected to Tulane.

Operational

- Tulane laid off approximately **10 percent of its faculty** (230 positions) for Spring 2006, in addition to more than **2,000 instructors and staff**.
- Tulane **established a new Undergraduate College** to replace the former college system for arts and sciences, to "simplify the undergraduate academic organization and consolidate administrative functions."
- Tulane **eliminated eight sports programs**, including women's soccer, men and women's tennis, and more.

JAPAN EARTHQUAKE & TSUNAMI OF 2011 – TOHOKU UNIVERSITY

OPERATIONAL IMPACT

Due to its location near Japan's coast, Tohoku University was one of the higher education institutions most heavily damaged by the 2011 earthquake and tsunami.

- 28 buildings (5 percent of the institution's total physical infrastructure) were deemed unsafe.
- An additional 48 buildings (8 percent of the institution's total physical infrastructure) were restricted in their usage.

Physical Infrastructure



- The earthquake resulted in the deaths of three students and injuries of 14 others.
- 526 students experienced damaged or destroyed homes.

Domestic Students



- Immediately following the earthquake:
- Approximately 1,200 (out of 1,499) international students left Japan.
 - Approximately 144 employees (out of 348) and international staff left Japan.

International Students/Staff



- The earthquake resulted in millions of dollars in damages to rebuild and refurbish campus buildings, including incorporating earthquake-proof designs.
- Faculty estimated additional damages stemming from the loss of research output.

Finances



UNIVERSITY RESPONSE

Apart from infrastructure needs, Tohoku University took a communal approach to recovery, with significant aid provided to the community.



Government Policies

- The [Japanese government](#) assisted universities with rebuilding via policies such as:
- Simplified application procedures for international students without the requisite re-entry permit
 - Emergency funds for international students studying in disaster areas



Communication

- In a period of significant uncertainty, [clear communication](#) helped reassure students of the safety of returning to classes:
- Information about the Tohoku University reconstruction process was conveyed quickly and accurately on its website
 - Tohoku kept in close contact with foreign embassies
 - Tohoku participated in international conferences



Community

- Tohoku University closely aided in [community reconstruction efforts](#):
- Created the Research Institute for Reconstruction and Regeneration from Disaster, which aided in "damage assessment, assistance for disaster victims and support activities for rehabilitation"
 - Created the International Research Institute of Disaster Science, focusing on relevant interdisciplinary research
 - Provided support for student volunteers

Crisis Duration

Tohoku University was able to resume academic operations just months after the earthquake.

- By [May 2011](#), nearly 86.5 percent of foreign students had returned to the Tohoku region.
- Though the [commencement of the semester](#) was delayed, Tohoku University was able to begin classes by May.

Source: [Tohoku University](#), [Chemistry World](#)

SARS – INTERNATIONAL STUDENT ENROLLMENT

ENROLLMENT IMPACT

The impact of SARS on enrollment figures and attendance policies varied greatly depending on the proximity of universities to SARS hotspots in East Asia.

United States

- Institutions like the [University of California, Berkeley](#) prevented the enrollment of international students from Hong Kong, Taiwan, Singapore, and mainland China for the 2003 summer session, a policy later eased due to concerns over racism.
- [Many universities](#), such as Syracuse University, George Mason University, and the University of Michigan called off study abroad programs or other trips to China and Hong Kong.

United Kingdom

- In 2003, institutions in the [United Kingdom](#) experienced a large increase of 43.3 percent in the number of applications from Chinese students. That year, China surpassed Hong Kong and Singapore in the number of students sent to study in the United Kingdom.

Canada

While [operations in Canada](#) functioned relatively consistently, SARS did impact students in the health sciences:

- The University of Toronto canceled classes, exams, and other activities for medical students.
- McMaster University canceled classes for the Faculty of Health Sciences, as did Ryerson University's School of Nursing.
- Ontario closed all hospitals to students.

East Asia

- Policies at [East Asian institutions](#) depended on the proximity of SARS:
- Nanyang Technological University in Singapore postponed final exam dates for two weeks.
 - The [Hong Kong government](#) shut down all schools, including colleges, at the end of March.
 - [Peking University](#) canceled economics classes after a department secretary tested positive, and allowed other department administrators to decide whether to cancel classes.

UNIVERSITY RESPONSE

Universities erred on the side of caution, developing response teams and establishing policies to handle class cancellations, student travel, and international student needs.

East Asia



- [Hong Kong Baptist University](#) helped develop interactive websites allowing students to keep up with classes while campuses were closed.
- [Fudan University](#) regularly disinfected classrooms and dorms, and kept students and staff informed via a regularly updated website.

Canada



- As Ontario encouraged Toronto residents with SARS symptoms to stay at home, the [University of Toronto](#) let departments be flexible with student and staff absences.
- McMaster University let students from SARS-affected countries stay on campus for the summer and encouraged the community to delay visitors from affected countries.

United States



- [Stanford University](#) developed an online form to track students' travel history and prepared individual housing in case quarantine needs arose.
- Indiana University of Pennsylvania convened a SARS Response Team to develop "prevention and intervention procedures," but ultimately felt it did not need to implement them due to the WHO's easing of SARS-related restrictions.

United Kingdom



- Universities like [Imperial College London](#) contributed to research efforts to combat SARS, collaborating with international peers at Hong Kong University to model the spread of the SARS virus.

NATURAL DISASTERS – AMERICAN INSTITUTIONS

OPERATIONAL IMPACT AND RESPONSE

In addition to Hurricane Katrina, a number of natural disasters in the United States have impacted university operations. The following graphic summarizes the impact of several natural disasters and how universities have responded:

Hurricane Sandy – New York University

Impact

- The [NYU Langone Medical Center](#) experienced severe flooding, forcing the evacuation of more than 300 patients and causing damage that forced patient wards to be closed for almost two months.

Response

- NYU Langone worked with Senator Charles Schumer to apply for federal emergency aid, and was awarded \$1.45 billion primarily used to stormproof hospital buildings.
- NYU Langone also took advantage of closures caused by the hurricane to accelerate planned construction projects, such as the doubling the size of the emergency department.

Camp Fire – Butte College

Impact

- The fire only minimally damaged the college, which closed for 18 days.
- However, the fire had a large impact on students, faculty, and staff, many of whom lost their homes.

Response

- The [California Community Colleges system](#) gave colleges like Butte the flexibility to adjust their academic calendars and dispatched financial aid officers to advise students of their aid options.
- The system board passed a policy to maintain funding levels, regardless of how colleges' enrollment would be impacted in upcoming semesters.
- The college also aimed to develop programs that would align with rebuilding needs in the surrounding community.
- Butte also set up a [foundation](#) to give between \$100 to \$500 to affected students.

Woolsey Fire – Pepperdine University

Impact

- Pepperdine was forced to [close two of its two campuses](#) for approximately two weeks.
- Because of previous experience with fires, Pepperdine already had [relevant protocols](#) in place calling for students to shelter in place on campus during the Woolsey Fire.

Response

- Pepperdine continued academic operations via a combination of online and remote assignments.
- Following the fire, Pepperdine conducted a number of [campus cleaning and air quality efforts](#), including a partnership with American Environmental Specialists (AES) to assess indoor air quality.

CORNELL UNIVERSITY CONTINUITY OF OPERATIONS PLAN

OPERATIONAL RESPONSE

Cornell University's [Continuity of Operations Plan](#) provides guidelines for contingency planning in case of emergency, outlining practices for areas such as staffing, finances, academics, and more.

Last updated in April 2020, the Plan provides a broad set of guidelines for Cornell to follow across a range of areas. Typically, the Plan provides for "continuity operations for up to 30 days," though the circumstances of each emergency may dictate modifications or adjustments. The Plan also includes the following implementation guidance:

- **Financial Guidance:** The Plan acknowledges that emergencies may result in financial exposure including "loss of tuition, sponsored program, and enterprise revenues."
 - Preparation expenses for disruptions are typically considered the responsibility of the operating unit. In extreme circumstances, units may request funding from the Operating Plans Committee.
 - Needs in an incident's aftermath will be discussed with the University Incident Management Team.
- **Human Resources:** The Plan includes the designation of Essential Services necessary for the "well-being for students, faculty, and staff", including teaching, research, and feeding and housing functions.
 - The university may need to cross-train personnel in an emergency, with units like student or health services facing particular demand.
 - During a change in operating status, Cornell commits to "assist[ing] employees with the financial burden of being out of work through no fault of their own."
 - Essential Services will continue to receive payment in addition to extra compensation.

The figure to the right highlights additional topics covered in Cornell's Plan, suggesting specific areas that universities should prepare for in case of future emergencies.

PLAN COMPONENTS

Academic Continuity

- Course delivery
- Academic evaluation
- Student participation

Research Operations Continuity

- Unit-based planning efforts and guidelines

Human Resource Guidance

- Cross-training or reassignment guidelines
- Pay practices
- Flexible work options
- Leave and return to work authorization

Critical Resources Guidance

- Vital records maintenance strategy
- Critical business applications and technology

Financial Guidance

- Individual operating unit guidance

Reconstitution and Recovery

- Restoration of essential services
- After-action review of plan effectiveness

APPENDIX: UNIVERSITY DISASTER POLICIES AND PLANS

The following table provides a broad overview of additional recovery plans that institutions have implemented to cope with operational disruptions.


Institution	Location	Operational Disruption	Disaster Policy/Plan	Plan Type
Boston University	Boston, MA (USA)	Ebola	Ebola and Boston University	<ul style="list-style-type: none"> Travel guidelines Health policies
Chinese University of Hong Kong	Shatin, Hong Kong	Student Protests	Press Release (Multiple)	<ul style="list-style-type: none"> Campus operations policies Academic policies
Dillard University	New Orleans, LA (USA)	Hurricane Katrina	Hazard Mitigation Plan	<ul style="list-style-type: none"> Physical infrastructure guidelines Academic policies Financial impact assessments
The University of Hong Kong	Pok Fu Lam, Hong Kong	SARS	Disease Detectives (p. 13)	<ul style="list-style-type: none"> Communications response Health policies Academic policies
The University of Texas Medical Branch at Galveston	Galveston, TX (USA)	Hurricane Harvey	Impact - UTMB Newsletter	<ul style="list-style-type: none"> Physical infrastructure recovery Response planning processes Community collaborations
University College London	Bloomsbury, LDN (UK)	Brexit	FAQs for Students (UCL and Brexit)	<ul style="list-style-type: none"> Academic policies
University of North Carolina - Wilmington	Wilmington, NC (USA)	Hurricane Florence	The News & Observer	<ul style="list-style-type: none"> Academic policies



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