Case Study: A model Process for Determining the Viability of a low performing Career and technical education program

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Learning Outcomes

- Define a low performing program
- Explain a model process for the evaluation of an academic program
- Identify factors that influence the viability of an academic program
- Complete an institution specific organizer to generate an action plan
- Identify solutions and strategies for low performing programs

Setting the Stage-IHCC

- 4,300 FYE
- Around 20 career programs (out of 59)
- Buildings, students, instructors etc.
- The worst cafeteria food East of the Mississippi!

Overview

- Building Inspection Technology (BIT) Program
- Necessity
  - Low enrollment, placement, graduation, completion rates
  - Current program could "fly under the radar"
- Needed to go beyond current program review process
- True program *Evaluation*
- Answer the question "Is this program still viable?"

Setting the Criterion

- What constitutes low performing?
  - Percentage of graduates
  - Percent filled in classes
  - Enrollment numbers in program
  - Completion rates
  - Transfer rates
  - Persistence rates
  - Employment rates
    - Most significant in CTE
- Colleges' mission, vision, and values
- Federal and state mandates

Challenges to Setting the Criterion

- What are acceptable levels of performance?
  - Number of graduates
  - Placement numbers
  - Enrollment numbers
  - Completion numbers
  - Student satisfaction
  - Employer satisfaction

Challenges to Setting the Criterion

- Institutional culture
  - Technical college
    - Pure CTE
  - Community and technical college
    - Liberal arts Vs CTE
  - Secondary institution
    - POS
  - Four year institution
    - Liberal arts Vs CTE
  - Community college
    - Liberal arts Vs CTE

Challenges to Setting the Criterion

Challenges to Setting the Criterion

What is low performing?

- Low enrollment
- Low course fill rates
- Persistence rates
- Graduation and completion rates
- Placement rates
- Employer satisfaction
- DFW rates
- Drop rates
- Student interest
- Unemployment rates

Setting the Criterion

- Simple statistical methods
- 20/80/20
- Holistic approach to all the data
  - Low enrollment
  - Low course fill rates
  - Persistence rates
  - Graduation and completion rates
  - Placement rates
  - Employer satisfaction
  - DFW rates
  - Drop rates
  - Student interest

Fall Fill Rates 2011

Lower Quartile-66.75		Median Quartile-79		Upper Quartile-88.25	
Department	Fill Rate	Department	Fill Rate	Department	Fill Rate
BIT	37%	ASL	71%	PA	88%
ENGR	37%	CJS	72%	PHIL	88%
OSYS	48%	PHYS	72%	CS	89%
CRDV	52%	CHIN	73%	ECON	89%
EDU	57%	POLS	73%	INTS	90%
GWS	58%	NURS	74%	PSYC	90%
MUSC	59%	HIST	75%	HCM	91%
ACCT	60%	HSER	75%	EMS	93%
CIS	60%	BUS	77%	ENG	93%
FREN	60%	GEOG	78%	STSK	93%
CBE	62%	ANTH	79%	CHEM	94%
THTR	66%	EAP	79%	GEOL	98%
CNT	67%	PHED	79%	FS	99%
		CMSV	82%	COMM	100%
		HUM	82%		
		SPAN	82%		
		BIOL	86%		
		HLTH	86%		
		MATH	86%		
		READ	86%		
		SOC	86%		
		ART	87%		

Academic Programs Lower Quartile

Fall Semester 2009		Fall Semester 2010		Fall Semester 2011		Fall Semester 2012**	
Program	Fill Rate	Program	Fill Rate	Program	Fill Rate	Program	Fill Rate
ITI*	22%	ENGR	30%	BIT	37%	OSYS	9%
AVIA*	25%	BIT	33%	ENGR	37%	CMSV	9%
FREN	37%	GWS	42%	OSYS	48%	STSK	12%
BIT*	39%	HCCC	50%	CRDV	52%	THTR	12%
CMSV	46%	OSYS	50%	EDU	57%	MUSC	13%
ENGR	47%	CHIN	63%	GWS	58%	CIS	14%
GERM*	50%	ASL	64%	MUSC	59%	EAP	14%
OSYS	55%	POLS	64%	ACCT	60%	POLS	16%
THTR	59%	EDU	65%	CIS	60%	ENGR	16%
PHYS	61%	MUSC	66%	FREN	60%	FS	17%
EDU	62%	FREN	68%	CBE	62%	ANTH	20%
JOUR*	62%	EMS	70%	THTR	66%	INTS	21%
ANTH	67%	CNT	71%	CNT	67%	SPAN	21%
HUM	67%					CRDV	21%
						EDU	21%

Fill rates

Goal Area	Sections Offered Fall Semester 2011	Sections Offered Fall Semester 2012*	Change
Goal 1-Communication	78	82	+4
Goal 2-Critical Thinking	197	210	+13
Goal 3A-Life Sciences	55	60	+5
Goal 3B-Physical Sciences	24	27	+3
Goal 4-Mathmatical/Logical Reasoning	22	20	-2
Goal 5-History, Social and Behavioral Sciences	96	98	+2
Goal 6A-Fine Arts	46	50	+4
Goal 6B-Humanities	26	31	+5
Goal 7-Human Diversity	56	60	+4
Goal 8-Global Perspectives	62	68	+6
Goal 9-Ethical and Civic Responsibility	34	32	-2
Goal 10-People and the Environment	25	30	+5
Non-Goal Area Courses	368	391	+23

About the industry

- Building Inspectors protect the public health, safety, and welfare by regulating the built environment
- Industry of around 1500 in Minnesota
- Over half are employed in the public sector
- Fun Fact: Building codes have been around since 2200 B.C., model codes have been around since the early 1900's, same format for building codes have been used since the 1920's.

About the program

- This program is designed to introduce students to the Construction Code profession, to provide a better understanding of codes to those who work with the profession, and to enhance the abilities of individuals currently involved in the Construction Codes profession.
- Training ground for building inspectors
- One of approximately 30 in the nation

Background

- Started in 1973 in response to state legislation
- Certificate program
  - Training ground for building inspectors
  - 5 content specific courses
- Degree program
  - Raise the professionalism of the industry
  - 14-17 content specific courses
- Regulated by the MN Dept of Labor (DOLI)
- Shared between IHCC and NHCC
- Offered in hybrid format, online and face to face
- Off site location

Background

- 60 credit A.A.S degree
- 29 credit certificate
- 10-11 credit “CORE” certificate
  - Entice completers
- 17 credit Building Permit Technician Certificate
- 16 credit housing certificate

Background

- Adjunct faculty working in the field
- Non-credentialed field
  - Credentialing policy implemented in 2010
- 2005 attempt made at a four year degree in Code Administration
- 2005 grant from the Department of Labor to develop all courses online
  - Attract a wider audience
  - Give greater Minnesota access to education

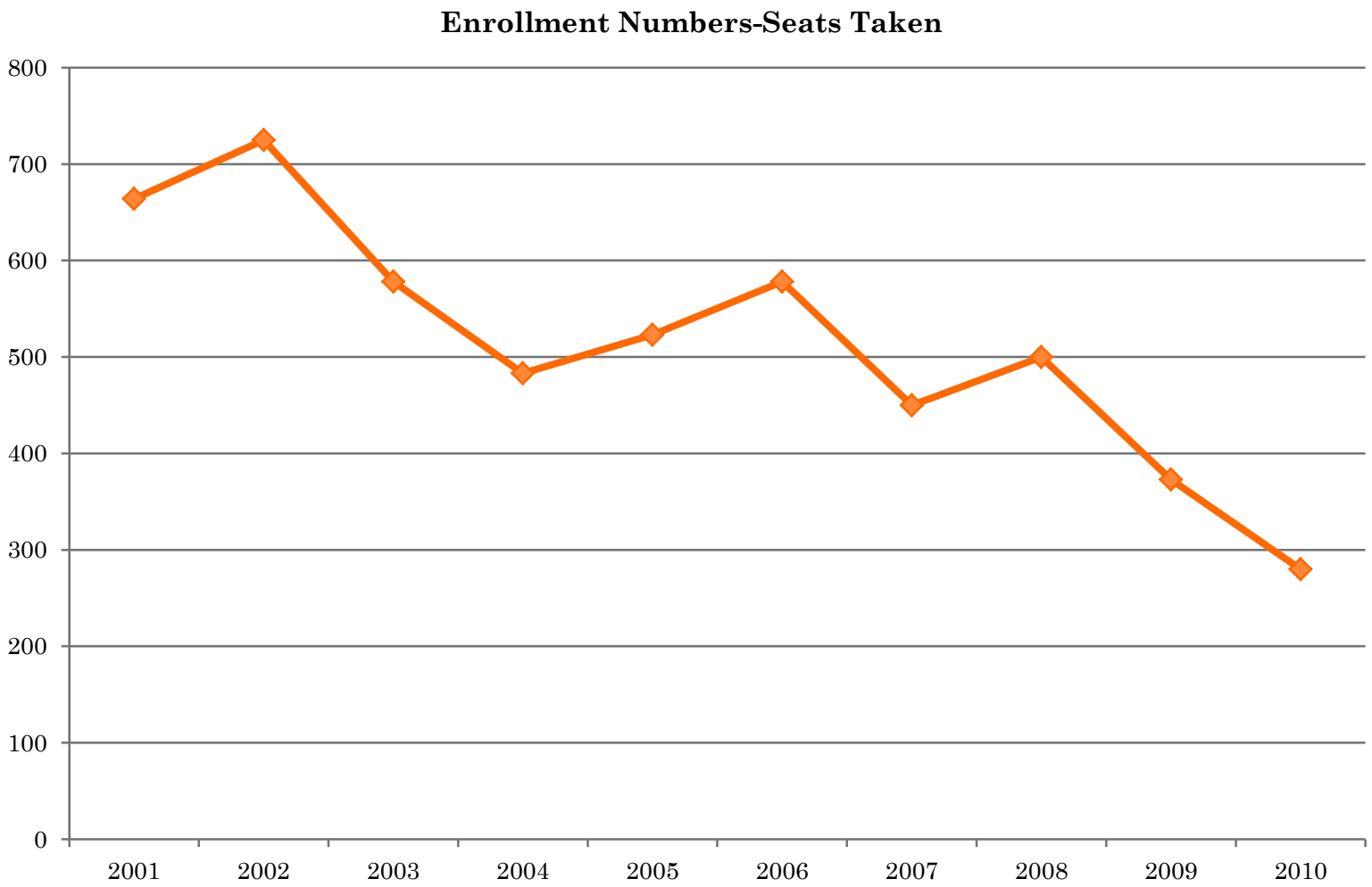
Background

- Student population
  - Displaced and injured workers
  - Returning adults seeking a career change
  - High school graduates exploring careers
  - Trades persons seeking state building official certification
  - Predominantly white males
  - Average age of 35

The Problem

- 58% decline in enrollment over the last 10 years
- 1980's 25-40 students per class
- 2001-2009 there were 49 A.A.S. degrees awarded and 150 certificates awarded
- 29 degreed students found related employment (self reported data)
- 61 certificate holders found related employment (self reported data)
- 2010-5 out of 22 students persisted from fall to spring semester

Enrollment Numbers 2001-2010



The Problem

- Alternative pathways to state certification
- Lack of a formal education requirements specified by the hiring municipalities
- Decline in construction activity
- Lack of industry support for the program

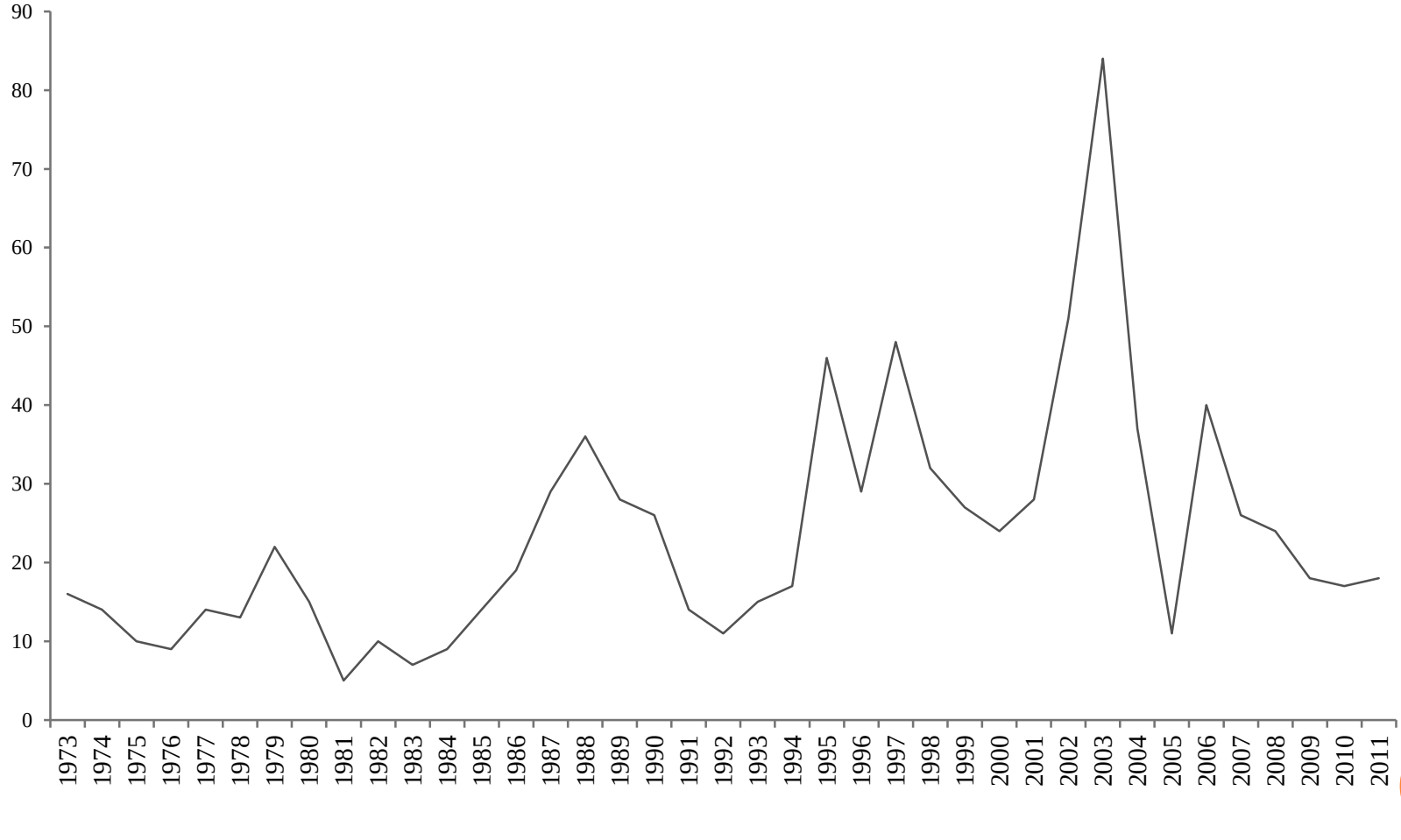
Certification requirements (MN)

- State law requires that each municipality enforcing the building code must have a designated building official certified by the Department of Labor
- Employees do not need to be certified, only show competency (certification vs. license)
- Must pass a certification exam
- Prerequisites required prior to taking exam

Certification requirements (MN)

- 1994 DOLI created a “point system” for prerequisites
  - Anecdotal data:
    - Trying to get away from to ex-carpenter with a limp to;
    - Could not find enough people to take the exam
- Included experience and national exams for points
- Points were still given for program and specific courses
- Allowed applicants to obtain points without ever setting foot in a classroom

The result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The process begins

- The criteria had been set
- Program could still "fly under the radar"
  - Break even point for running courses
  - Moral and legal obligation to students

Identify all stakeholders

- Advisory board
  - Linear approach to program, focused on municipal building inspectors and DOLI
  - MNSCU had no voting rights on board!
- Hiring managers
- LMC
- City/county managers association
- BAM
- Contractors
- Labor unions
- End users
- Students
- Four year, two year, and secondary partners
- National certifying agencies
- Other programs

Identify all stakeholders

- Redefined industry
- Forced us to look at the program in a new light
- Global, holistic look
- Set direction for data collection

Trends in similar programs (national)

- Structured interviews
- Qualitative and quantitative data
- Paint the complete picture
- Anecdotal data

Trends in similar programs (national) Length of program

- 59% of institutions reported having a program for over 20 years
- 24% reported having a program for 16-20 years
- 6% reported having a program for 11-15 years
- 12% reported having a program for 6-10 years
- No one reported having a program for less than five years
- Conclusion: Mature programs

Trends in similar programs (national) Enrollment

- 57% reported a decline in enrollment
- 28% reported no change in enrollment
- .07% reported an increase in enrollment
- One institution reported no prior enrollment data
  - Anecdotal data: Enrollment has always been low

Trends in similar programs (national) Decline in enrollment

- 93% reported that a decline in enrollment started between zero and five years ago
- 7% reported that a decline in enrollment started between six and 10 years ago
- Three institutions did not report a decline in enrollment
- Note: MN program started decline in 2002

Trends in similar programs (national) Graduation rates

- 43% reported zero to five graduates per year
- 7% reported six to 10 graduates
- 14% reported 16-20 per year
- 14% reported more than 20 students
- Six institutions did not know their graduation rates
- Anecdotal data: We don't keep that type of information

Trends in similar programs (national) Placement rates

- 18% reported zero to five students placed in field of study per year
- 82% reported that they did not track placement rates of students
- Anecdotal data: Some are working in the field so we do not need to track that data

Trends in similar programs (national) Delivery methods

- 13 institutions offer their program in a face-to-face format
- Two institutions offer their program in a fully online format
- One institution reported that they offer their program face-to-face, online, and blended/hybrid formats as well as offered there courses in off-site locations (labor union training centers)
- Anecdotal data: I don't believe in online learning

Trends in similar programs (national) State certification prerequisites

Table 1

State Certification/Licensing and Educational Prerequisite Requirements

State Certification/Licensing Requirements				Educational Prerequisites			
Institution	Certification	License	Model Code Certification	AAS Degree	BIT Certificate	Coursework in BIT	No Educational Requirements
1			X		X		
2			X				X
3			X				X
4	X						X
5	X			X	X		
6	X	X					X
7	X		X		X		
8	X					X	
9	X						X
10	X						X
11			X				X
12			X				X

Trends in similar programs (national) closure rates

- Six institutions have closed or modified their programs due to low enrollment
- Three institutions have closed or modified their programs because of a lack of employment opportunities for graduates
- One institution closed or modified their program because of budget issues

Trends in similar programs (national) future plans

- Two institutions indicated that they will close the program
- Three institutions plan to keep the program open in its current form
- Two institutions plan to modify the program (add more classes to attract students, revise curriculum)
- Seven institutions (44%) plan to reevaluate the program at a future date
- One program plans on adding course in green codes
- One program is being converted to customized training
- One respondent indicated that their program has already been closed.

Trends in similar programs (national) future plans

- Anecdotal data
  - Fly under the radar
  - Taught by adjuncts
  - These guys need a place to go
  - Program was a joke from the start
- Conclusion: We are all in the same boat!

Trends in similar programs (national) successful programs

- Industry support!
  - Ride alongs
  - Internships
  - Coops
  - Release time to attend class
  - Step increase for completing certificate and degree
  - Hire graduates
  - State requires a degree
  - Robust, broad advisory boards
- Curriculum is specifically designed to pass national certification exams

National Certification data

- 17 states have no requirements for the certification or licensing of building inspectors or building officials
- 23 states have a state certification or licensing requirement, 12 of which will accept a model code agency certification as an equivalent
- 9 states have a requirement for certification from a model code agency
- 1 state requires both a state certification and model code agency certification.

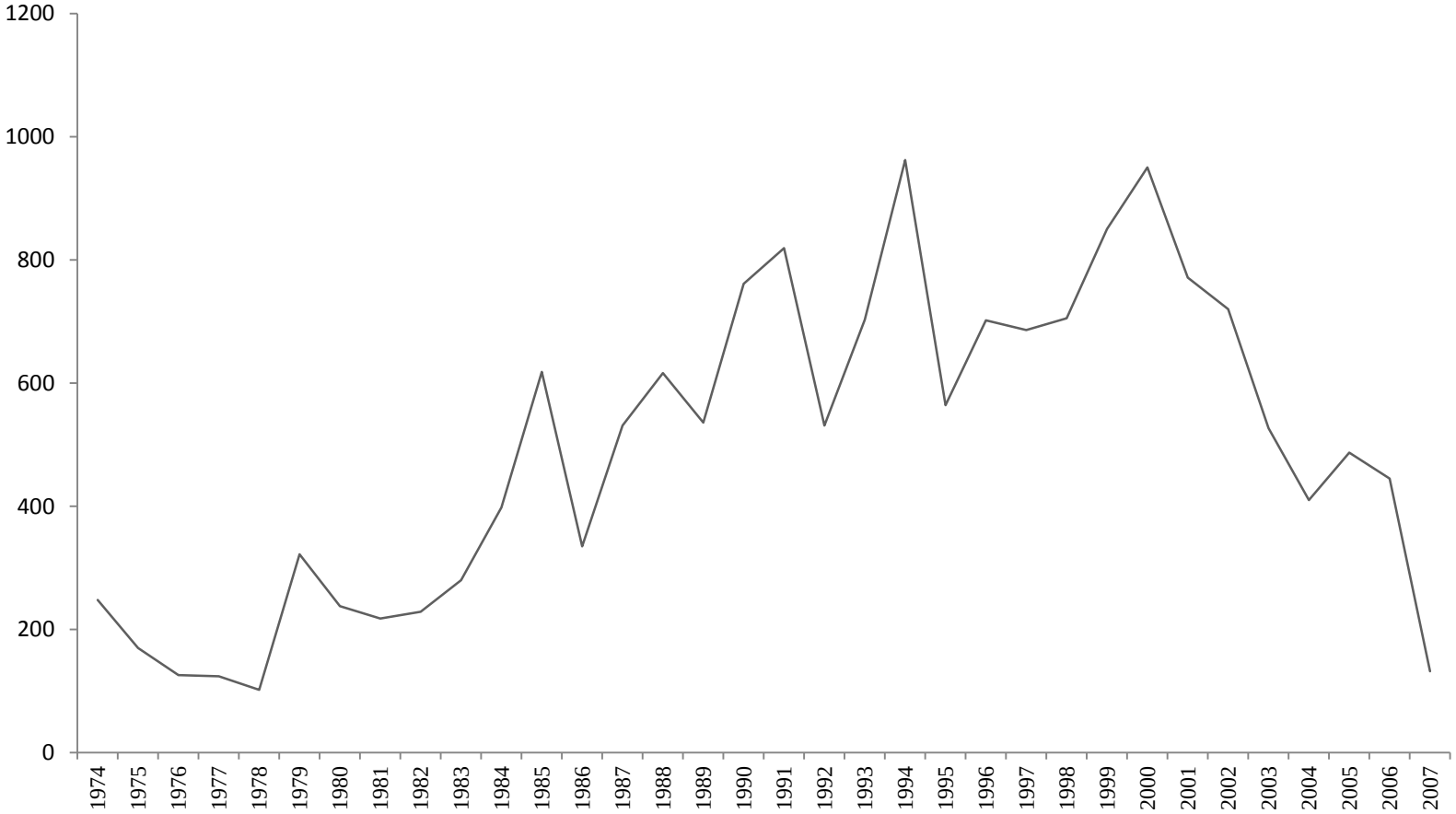
National Certification data

- The International Code Council (ICC) issues certifications for building inspectors
- No prerequisite requirements
- Open book, 70% to pass
- 1989-10 types of exams
- 2012-45 different types

National Certification data

- The ICC issued 16,816 Building Official Certifications between 1974 and 2007
- Certifications reached an annual low of 102 in 1978 and reached a high of 962 certifications issued in 1994
- Certifications also peaked in 2000 with 950 issued
- 132 certifications issued in 2007

National Certification data



EMPLOYMENT DATA

- According to the Minnesota Department of Employment and Economic Development, employment rates for construction and building inspectors in Minnesota are projected to increase by 22.8% by the year 2014, adding 538 new jobs
- Slightly more optimistic than the national average of a 17% increase
- Municipalities are contracting with other agencies and private firms
- Encouraging Building Permit Technicians to get certified as a building official limited

EMPLOYMENT DATA

2008	260
2009	331
2010	360
2011	397
2012 (thru Sept)	140

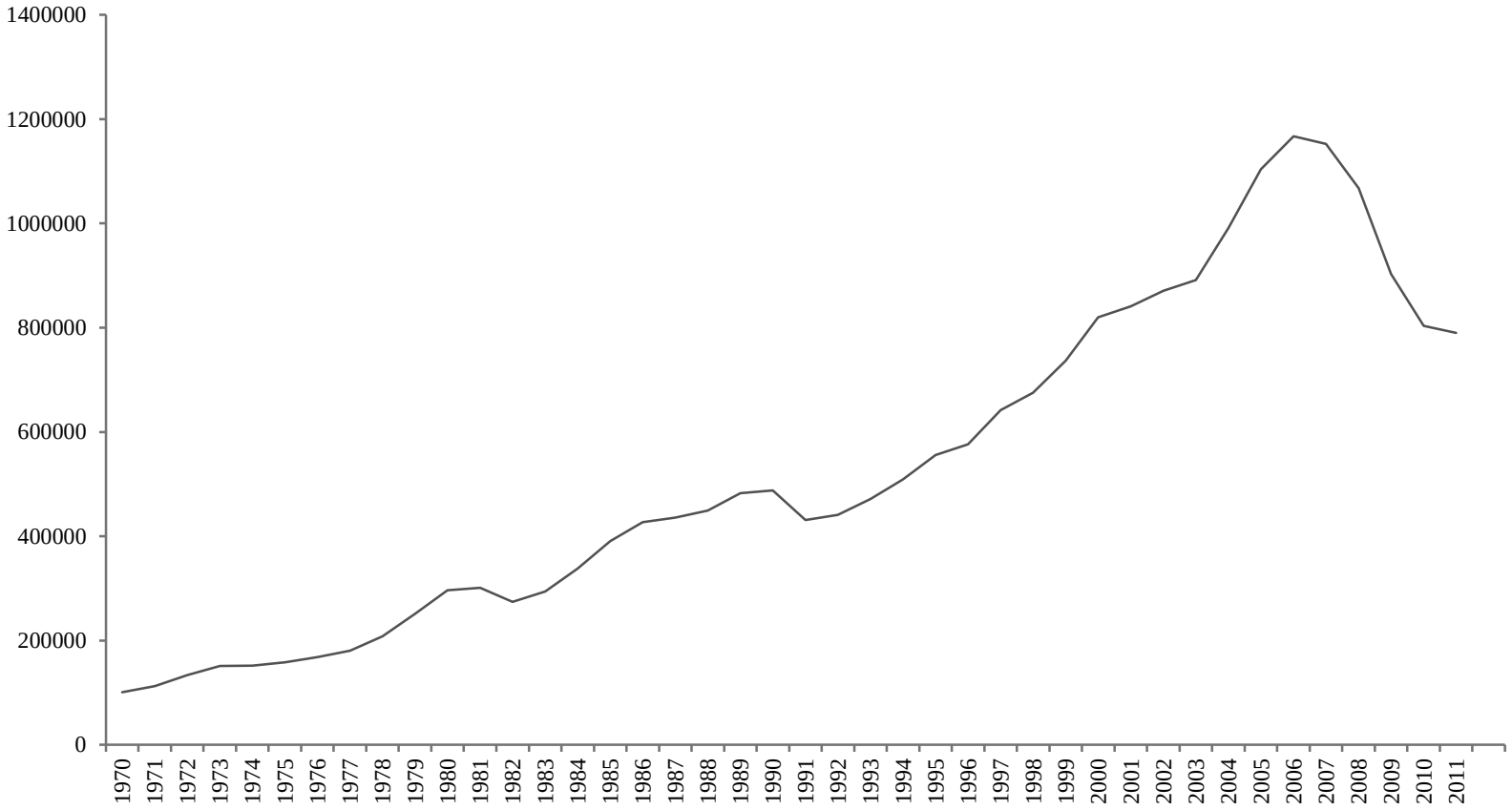
Hiring practices

- Over 30 job postings reviewed
- Rural, suburban, state, and urban
- Conclusions: No two were the same, very few solely required a degree in BIT

Hiring practices Sample

- ***Minimum qualifications.***
- Must hold a current a current Certified Building Official certification by the State of Minnesota. In order to be considered further, you must meet one of the following or a combination of the following criteria:
  - Must have five years experience in municipal building code administration or enforcement-or-
  - Must have four years experience in municipal building code administration or enforcement and five years experience in construction regulated by State Building Code-or-
  - Must have four years experience in municipal building code enforcement and AA degree in Building Inspection Technology-or-
  - Must have four years experience in municipal building code administration or enforcement and post-secondary coursework in Building Inspection Technology, Building Construction Architecture, Building Construction Engineering (one year full-time coursework for six months not to exceed one year substitution).
- ***Preferred qualifications.***
- International Code Council Certifications

Construction activity-Spending



Construction activity-new housing units

Pending changes

- Residential fire suppression systems
- Green codes
- Federal mandates for energy efficiency
- State mandates for energy efficiency
- Significant changes to mechanical codes
- Conclusion: Complexity is on the rise!

Results of study

- Focus groups agreed there was need for the program, however, no consensus on make up of program
- Role of the building official will change
  - Manger of specialty inspectors
  - General practitioner of the inspections industry
  - Manager of other city functions such as housing and rental licensing
  - More knowledge and communication skills required
  - Big picture, needs to understand the purpose and intent of codes, more versed in building science

Results of study

- Where will they get these skills?
  - Formal education (architecture, engineering, housing, planning, community development)
  - Training on new products and methods, code changes, energy efficiency, and moisture intrusion
  - Continuing education from model code groups
  - Mentoring and on-the-job training

Results of study-BIT Program

- Post associate's degree certificate
  - Combination face-to-face and online delivery
  - Face-to-face, online, and hands-on educational experiences
  - Independent learning
- Undergraduate certificate (minor)
  - Fully online
  - Classroom, online, and apprenticeship
  - Hybrid (online with face-to-face components)

Results of study-BIT Program

- Classroom instruction with on-the-job training
  - Formal apprenticeships with jurisdictions
  - Co-op programs
  - Post-degree internships
- Continuing education (non-degree related)
  - Online and face-to-face by for-profit entities
  - Online and face-to-face by a consortium of academic institutions

Conclusions

- There is a need for a BIT program
  - Not now
  - In what form?
  - There may be a market for others such as architects or construction managers
- The ties between industry and academia need to strengthened before the program can be viable again
- Further research is needed
  - Factors that influence low enrollments
  - Successful programs
  - Factors that will gain industry support

WHAT WE DID

- IHCC closed the program (degree and certificates)
- NHCC closed all, designed a 4 course, 14 credit certificate
  - Accelerated
  - Eight week semesters
  - One night a week for two semesters

THE MODEL

- Set criteria for performance
  - Institution specific
  - Industry and student needs
- Identify all stakeholders
- Define industry
- Gather data:
  - Trends in similar programs local and national
  - Local and national certification/licensure requirements
  - Local and national employment trends and projections
  - Pending changes that will affect program or certification/licensure (local or national legislation)
  - Focus group (all stakeholders formal and informal)
  - Surveys (all stakeholders)
- Analyze data to determine viability

The model

- Program is not viable:
  - Explore options
    - Close program
    - Re-tool program to meet future demands if identified
    - Customized training/professional development

THE MODEL

- Program is viable but low performing:
  - Why is program low performing?
  - Identify student population (adult, ESL, traditional)
    - Scheduling issues
      - Conflict between core courses and liberal art courses
      - Delivery times do not match student needs
      - Try to build a two year schedule
    - Instructional design issues
    - Content delivery
    - Marketing-Who knows about program?
    - Student interest-How do we develop student interest?
  - Explore alternatives:
    - Accelerated program
    - Programs of study
    - Articulation agreements with four year institutions
    - Evening and weekends
    - Daytime traditional
    - Alternative delivery methods

SOLUTIONS

- Intervention teams
  - Instructional design
  - Pedagogy/andragogy
  - Type of program will determine makeup of team
  - Faculty mentorships
- Offer only “bread and butter” courses
  - Eliminate unnecessary electives
  - Offer courses that will lead to completion
- Carrying capacity of faculty
  - Offer only the number of courses that UFT faculty can teach
- Supply and demand
  - Less courses, higher demand
- Goal area competition
  - Are programs “robbing” each other of students?

SOLUTIONS

- Global snapshot of program
  - Go beyond institution
  - Is there demand in other areas?
  - What is happening nationally?
- Advisory boards
  - Are they effective?
  - Who is on the board?
- Counseling and advising
  - Are they knowledgeable about the program?
  - Program specific faculty advisors
  - Secondary and transfer institutions

Lessons learned

- Process helps you look at other programs with a different lens
- How do you start the process?
  - Who is going to make the call?
- Tough decisions for an administrator
- Close program
  - Graduates
  - Adjunct faculty
- Do what is best for students

Activity

- Program Viability Organizer

Questions

- What questions do you have?

Thank you!

- Be an advocate for CTE!