Labor Market Assessment Tool - LMAT

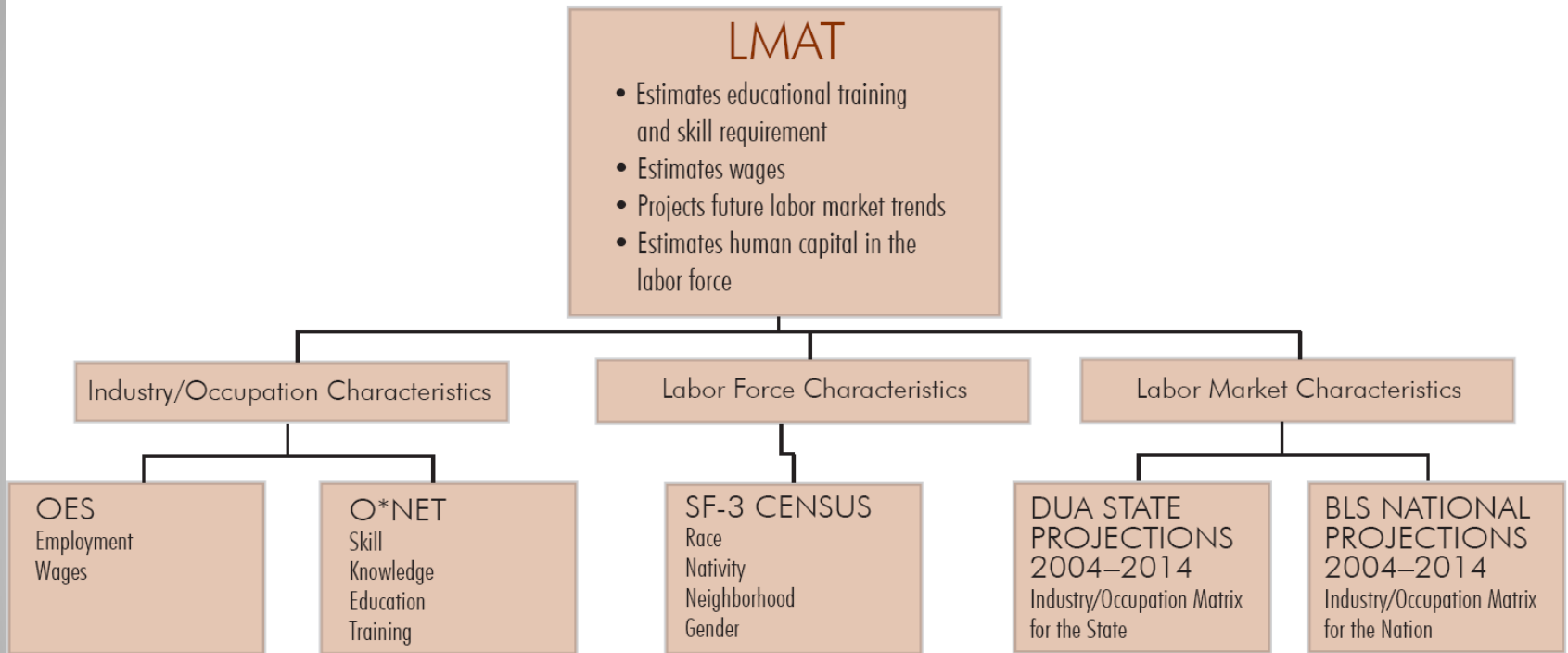Introducing the Labor Market Assessment Tool

What is it?

- An interactive computer-based program developed as a partnership between the Boston Redevelopment Authority's (BRA) Research Division and the Center for Urban and Regional Policy (CURP) at Northeastern University.

- Program developers:

  ◦ BRA's Research Director Alvaro Lima;

  ◦ CURP's Director Barry Bluestone;

  ◦ Alan Clayton-Matthews (a CURP Senior Fellow and an Associate Professor of Public Policy at the University of Massachusetts Boston);

  ◦ BRA Senior Research Associate Mark Melnik.

What does it do?

- Produces the distribution of occupations by educational, skill, knowledge, and training requirements by industry.

- Estimates wages

- Provides employment projections by educational, skill, knowledge, and training requirements by industry for future labor market scenarios.

- Can be used to:
  ◦ Estimate the difference between the educational attainment of the current labor pool and the workforce requirements of the current labor market;
  ◦ Estimate both labor demand and the occupational characteristics of labor supply.

- Combines various secondary data sources related to the labor market and workforce
  ◦ O*NET, OES, SF-3, DUA State Projections, BLS national projections.

What data sources does it use?

LMAT
- Estimates educational training and skill requirement
- Estimates wages
- Projects future labor market trends
- Estimates human capital in the labor force

Industry/Occupation Characteristics

Labor Force Characteristics

Labor Market Characteristics

OES
Employment
Wages

O*NET
Skill
Knowledge
Education
Training

SF-3 CENSUS
Race
Nativity
Neighborhood
Gender

DUA STATE PROJECTIONS 2004–2014
Industry/Occupation Matrix for the State

BLS NATIONAL PROJECTIONS 2004–2014
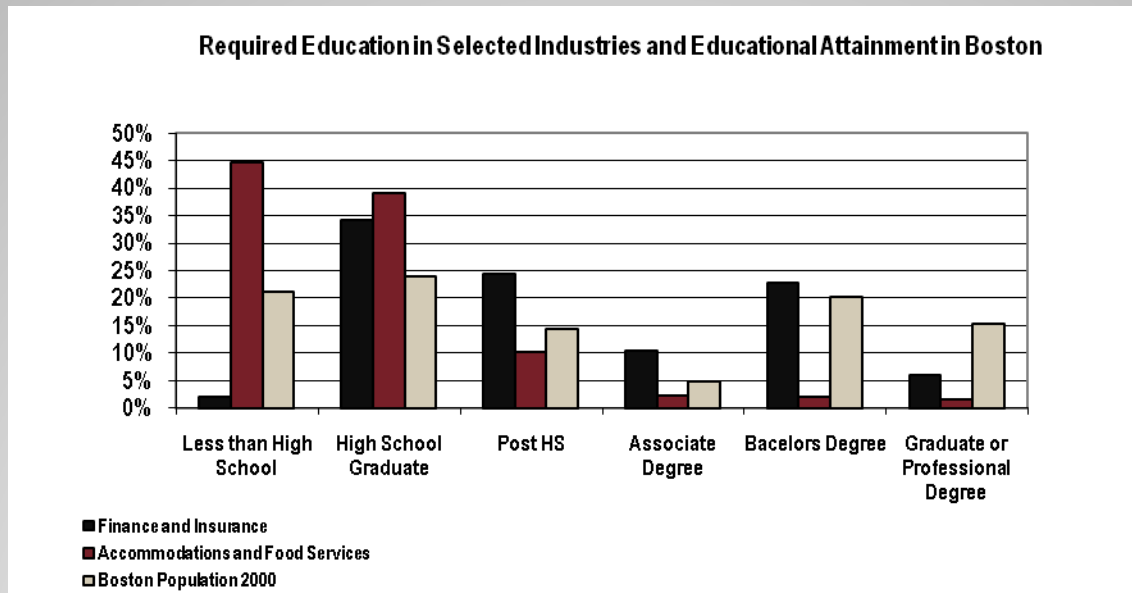Industry/Occupation Matrix for the Nation

What is unique about it?

- Contains data on:
  - Over 800 occupational titles;
  - Close to 1200 industrial classifications;
  - Approximately 140 different measures of job requirements;
  - Two different sets of labor market projections for the year 2014.

- LMAT outputs can be linked with any other sources that use the Standard Occupational Classification (SOC) and/or North American Industrial Classification (NAICS) Systems.

- It is an all-in-one source for looking at:
  - Occupational requirements by industry in the labor market;
  - Critical demographic and human capital characteristics of the labor force.

- Can be updated frequently to use most-up-to-date versions of OES, O*NET, BLS and DUA labor market projections, and Census data.

What can it do?

- LMAT can plot the educational requirements for an industry or set of industries and compare them with the educational attainment of Boston's population.

Required Education in Selected Industries and Educational Attainment in Boston
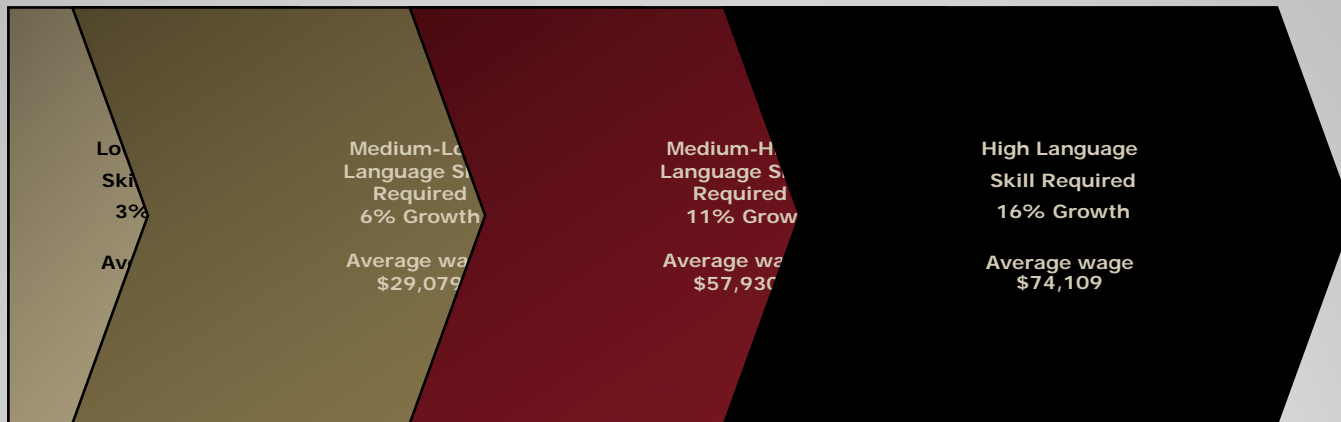

- This example shows the educational requirements for the *Finance and Insurance Industry* with that of the *Accommodations and Food Services Industry* in comparison with the actual educational distribution of Boston's labor force.

How we used it with the MIRA Coalition?

- The BRA Research Division worked with the Massachusetts Immigrant and Refugee Coalition (MIRA) on a project related to language skill requirements in the labor market.
- LMAT was used to project job growth and average wages by language skill requirements for new jobs created between 2004 and 2014.

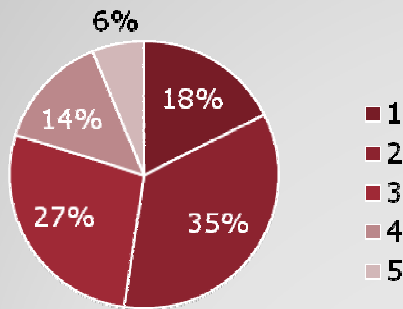| Low Language Skill Required 3% Av... | Medium-Lo... Language S... Required 6% Growth Average wa... $29,079 | Medium-H... Language S... Required 11% Grow... Average wa... $57,930 | High Language Skill Required 16% Growth Average wage $74,109 |

- These data indicate that the number of new jobs available to individuals with low English language skills is severely limited.
- Also, new jobs requiring low language skills tend to be extremely low paying. This suggests that individuals with limited English language skills will have a very difficult time finding employment in occupations that pay an adequate wage.
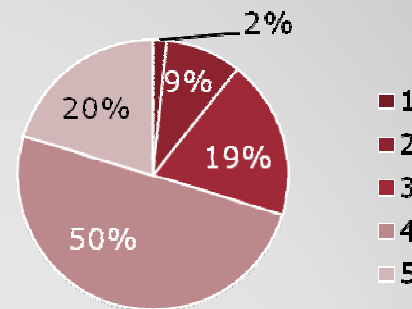
How was it used with the BRA Life Tech Economic Initiative?

- In an analysis done for the City of Boston on the growing Life Sciences sector, LMAT was used to show the employment distribution of the sector by **job zone** for current employment, as well as for projected new jobs.

  - **Job zone** is a measure of education, training, and overall experience necessary to do a job.
  - **Job zone** is divided in 5 categories with "1" being the lowest and "5" being the highest.
  - The more training and education necessary, the higher the job zone.

Life Science Industry Employment Distribution by Job zone for 2005

- 18% (1)
- 35% (2)
- 27% (3)
- 14% (4)
- 6% (5)

Legend: 1, 2, 3, 4, 5

Life Science Industry Employment Distribution by Job Zone for New Jobs 2005-2014

- 2% (1)
- 9% (1)
- 19% (2)
- 50% (4)
- 20% (5)

Legend: 1, 2, 3, 4, 5

- This example shows the job zone distribution for current employment, as well as projected new jobs for 2014 in the *Life Sciences Industry*.

How was it used with the BRA Backstreets Economic Initiative?

- In an analysis of the *Food Manufacturing Industry* LMAT was used to help indentify which skills stood out as particularly important for the industry when compared to the economy at large.
  - There are 35 different skills grouped into six broad categories.

Skill	Food Manufacturing (skill quotient)
Operation Monitoring	1.641
Quality Control Analysis	1.566
Operation and Control	1.563
Equipment Maintenance	1.563
Repairing	1.444
Troubleshooting	1.312
Systems Evaluation	1.198
Systems Analysis	1.191
Installation	1.162
Programming	1.103
Equipment Selection	1.094
Technology Design	1.086
Management of Material Resources	1.083
Management of Personnel Resources	1.046
Mathematics	1.015
Coordination	1.012

- Skill quotient greater than "one" shows a concentration of demand for that particular skill in the food manufacturing industry, compared to the economy at large.
- The higher the skill quotient, the greater the concentration of demand.

What information do we need to get started?

- Industry or set of industries you have in mind for analysis.
- Some measure of employment
  ◦ Based on current data
  ◦ Based on a proposed project
  ◦ Based on a percentage of overall jobs in an industry
- Set of skills, training, and/or education requirements you are interested in.

LMAT Series

- The LMAT Series is a collection of reports focusing on the various applications of the program, including:

  ◦ general discussions of the skill requirements;
  ◦ wage distributions associated with selected industries and the labor market as a whole.

- In addition, the LMAT Series will analyze the relationship between occupational requirements and worker attributes in Boston's population.

Thank you!

For additional information on LMAT and LMAT Series please visit:

http://www.cityofboston.gov/bra/pdr/PDRSubject.asp?SubjectID=22

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July 2008