ETF – Burning Glass

Case study – day 2
Big Data for Labour Market Intelligence (LMI)

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Burning Glass turns real-time data into actionable insights

• Burning Glass Technologies is a leading job market analytics firm, helping global enterprises track and plan for disruptive skills while aligning talent strategy to business strategy.

• Our data-driven approaches to strategic workforce planning help firms to:
  • Predict future changes to their workforces and their impact;
  • Rearchitect roles to ensure their workforces are future ready and to optimize for cost & availability;
  • Identify new talent pools for hard to fill jobs; and
  • Map reskilling and upskilling pathways and align learning investments to talent strategy.

• Burning Glass’s team of 380+ employees spans four continents and includes deep expertise in applying big data methods, natural language processing, taxonomy development, and complex model development in the HR domain. The company is backed by global private equity leader KKR.
Sourcing Talent through Skills

Jobs are defined by the skills they require

But those skills are constantly changing

Our job and skills taxonomies form a common language that decodes these changes

This yields real-time insight into the skills that unlock opportunity and prepare the workforce for the future

3.4 million
Active unique jobs collected daily

40,000
Sources across the web - job boards and corporate sites

>1 million
Firms represented, from large corporations to SME’s

Dynamic Labor Market Taxonomy
- 23 Career Areas
- 1,700 Occupations
- 18,000 Skills
- 60,000 Skill Variants

80%
Deduplication ensuring integrity and consistency

300 million
Resumes processed per annum

>1 billion
Historical job market records
What it Takes: Data and Analytics Engine

Normalising the labour market to enable data-driven conclusions

- Capturing Job Market Data: 3.4 million active, unique jobs daily
- Tagging and Structuring: 70+ elements of metadata
- A Common Language: Proprietary taxonomy for valid comparisons
- Drawing Conclusions: Insight from in-demand skills
Jobs Have a Genome
And leading recruiters need a map

- Jobs are defined by skills
- Increasingly, the unit of currency of the job market is skills – not jobs
- Skills express the job market’s (workforce’s) dynamics
- Skills are the key to unlocking mobility within and between roles
- Mapping between skills and jobs provides a powerful bridge between Talent Analytics and Strategic Workforce Planning
OECD paper – Occupational representativeness

Burning Glass Technologies’ data use in policy-relevant analysis: An occupation-level assessment

Emile Cammeraat, Mariagrazia Squicciarini

Link: https://dx.doi.org/10.1787/cd75c3e7-en

Proposes: Weighting schemes aimed at making BGT-based analysis representative

Concludes: BGT appears as a good source of information and allows an up-to-date snapshot of jobs and skills demand patterns and trends
What it Takes: Robust, Multi-Tiered Ontologies for Skills & Jobs

Skill Hierarchy Sample: Web and Mobile

Metadata Elements

- Skill Type
- Description
- Demand
- Projected Growth
- Occupations Hiring
- Average Salary
- Industries Hiring
- Employers Hiring
- Similar Skills
The Intersection of Skill & Occupation Taxonomies Yields Insight on What Drives the Value of Talent

**Core Skills:** Definitional skills to each occupation which workers need in order to contribute.

**Building Block Skills:** Although these are required and relevant, workers aren’t always trained in these skills.

**Distinguishing Skills:** These are emerging, fast-growth skills or core opportunities for specialization that enable workers to differentiate themselves – and often command significant salary premiums.
How Skills Define Occupations

Industrial Engineer:
Devises ways to make production processes more efficient and less wasteful. Uses technology and engineering to help companies and organizations produce products with efficient use of time, resources, and energy.

Common job titles include:
- Quality Engineer
- Industrial Engineer
- Supplier Quality Engineer
- Packaging Engineer
- Production Engineer

Baseline Skills:
- Quality Assurance and Control
- Communication Skills
- Problem Solving
- Organizational Skills
- Writing
- Planning
- Troubleshooting
- Root Cause Analysis
- Computer Skills

Note: Bolded skills indicate those that make a job more difficult to fill.
Reskilling and Upskilling Pathways

- Map common career paths
- Map uncommon career paths
- Discover “hidden” employee skills
- Define the optimal skill requirement for roles
Map Pathways To Advance Careers
By Building on Workers’ Existing Skills

Cost-Benefit Analysis

Positive
Rail Car Repairers
(Wage $56,000)

400
1,100

Negative
Coating, Painting, and
Spraying Machine Setters,
Operators, and Tenders
(Wage $36,000)

200
200

Strongly negative
Automotive Body and
Related Repairers
(Wage $46,000)

3,500
13,900

Strongly negative
Transportation Vehicle,
Equipment and Systems
Inspectors, Except Aviation
(Wage $74,000)

100
1,300

Molding, Coremaking &
Casting Mach. Setters
(Wage $34,000)

73
2

2,700
expected job losses
in industry

Viable and desirable
transitions within industry

With positive cost-benefit balance
(company perspective)

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Find The Most Efficient Opportunities For Retraining

Talent Pools and Skill Gaps for a Growing Auto Industry Occupation

**Occupation:** Tool and Die Makers
- **Skill Gaps:**
  - Computer Numerical Control (CNC)
  - Mastercam
  - Machining
  - Swiss Style Lathes
  - G-Code

**Occupation:** Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders
- **Skill Gaps:**
  - Computer Numerical Control (CNC)
  - Machining
  - Mastercam
  - Lathes
  - Swiss Style Lathes

**Occupation:** Cutting, Punching, and Press Machine Setters, Operators, and Tenders
- **Skill Gaps:**
  - Computer Numerical Control (CNC)
  - Lathes
  - Mastercam
  - Computerized Numerical Control Lathes
  - G-Code

**Target:** Computer Numerical Control (CNC) Machine Tool Programmers
Reskill & Redeploy Redundant Workers
By Leveraging Skill Adjacency for Highly Efficient Training

Growth Opportunities and Skill Gaps for a Shrinking Auto Industry Occupation

Skill Gaps
- Leadership
- Scheduling
- Supervisory Skills
- Budgeting
- Lean Manufacturing

Inspectors, Testers, Sorters, Samplers, and Weighers

Production Supervisors

Skill Gaps
- Preventative Maintenance
- Predictive Maintenance
- Hydraulics
- Computer Numerical Control (CNC)
- Robotics

Engineering Technicians
Cyberseek.org and CyberSeek.com.au tracks cybersecurity demand in the United States and Australia and provides interactive career pathways for jobseekers and students.

Wheretheworkis.org compares entry-level employer demand in the UK with the number of learners completing related programs of study.
More information:

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