Technology Solutions

Demystifying AI's Impact on Jobs in the Service Sector

With so much hype around the potential disruption that artificial intelligence (AI) and automation will have on the service sector, it can be difficult to gain a clear understanding of how AI will affect your industry or business. Much of what's been published to date tends to oversimplify the issue, as evidenced by a sampling of these recent headlines:

- *Fortune*: A.I. Expert Says Automation Could Replace 40% of Jobs in 15 Years
- CNBC: Robots may replace 800 million workers by 2030. These skills will keep you employed
- *The Washington Post*: This Silicon Valley start-up wants to replace lawyers with robots
- *Harvard Business Review*: Technology Will Replace Many Doctors, Lawyers and Other Professionals
- *TechRepublic*: Will AI lead project managers to the unemployment line?
- *The Guardian*: Robots will take our jobs. We'd better plan now, before it's too late

But what's the reality? Putting hyperbole aside, what does AI actually mean for you and your business?

How to think about the impact of AI

There are two ways to think about the potential impact of AI:

1. **Automation:** To what extent can AI replace work done by people, reducing or eliminating the need for labor?
2. **Improvement:** To what extent can AI improve the outcomes of labor (e.g., through greater access to information, or thanks to the power of new analytical tools)?

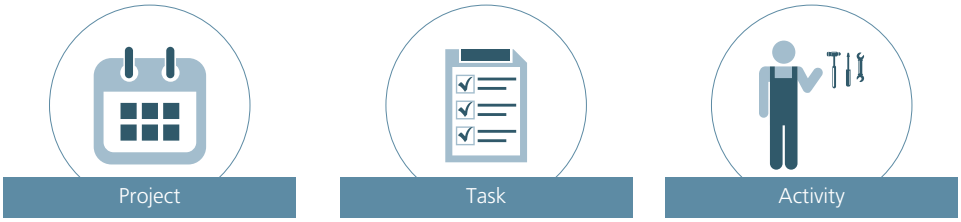
In this Technology Solutions Overview, we'll focus on automation — which is top of mind for many of our clients.

Why many AI studies miss the mark

A number of studies have sought to estimate how automation might affect human labor, but they typically evidence one of three common flaws:

1. **Too broad:** Studies (often government-sponsored) that attempt to span multiple industries tend to rely on broad-

Figure 1
Labor activities



Within a pool of labor, there will be a variety of projects or "types" of work being conducted.

For example, as management consultants, examples of project types might include "growth strategy," "new market entry," or "transaction support."

Each project can be broken down into a series of tasks, or a workflow. Tasks are the critical building blocks of a project.

For example, during a consulting project, tasks might include "estimate the size of the market," "gather feedback from customers," etc.

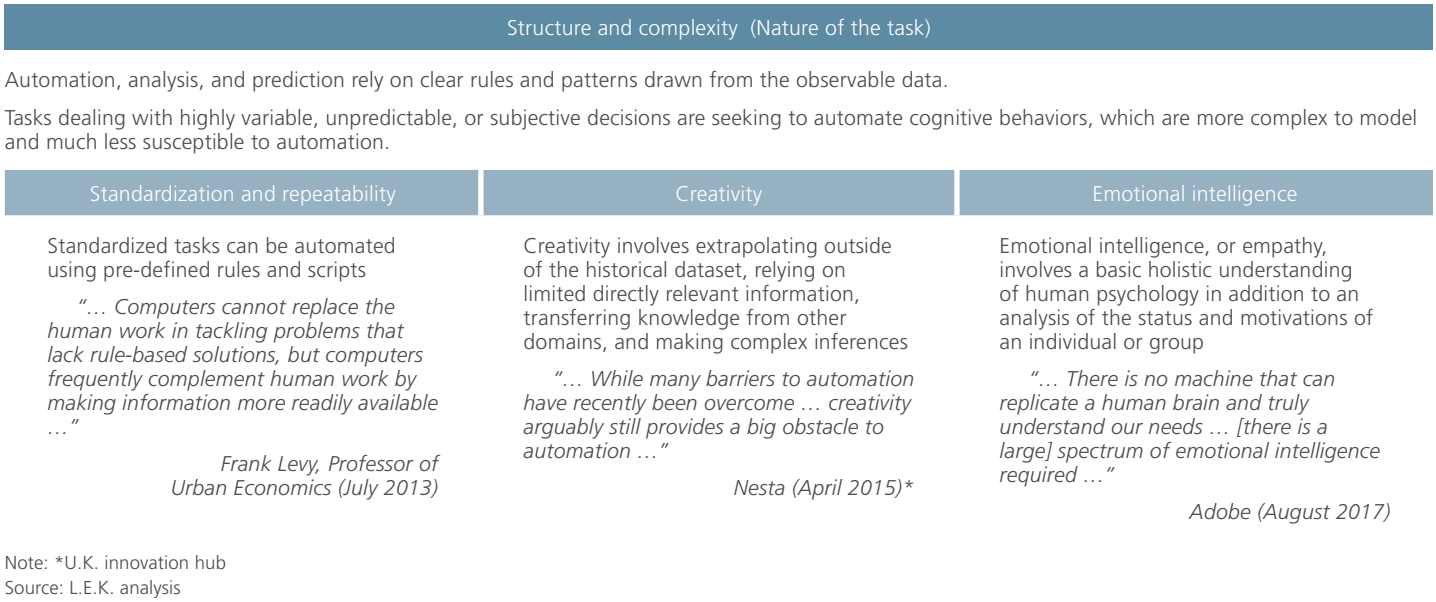
Activities are the fundamental universal components of tasks.

All tasks (excluding manual labor) are composed of some mix of:

1. Finding and gathering information
2. Reviewing and analyzing information
3. Drafting output or work product
4. Presentation or live discussion
5. Electronic communication
6. Other administrative tasks

Activities vary in the type of data they are using (and this impacts their susceptibility to automation). For example, AI may have different capabilities with text-based data vs. audio-visual data.

Figure 2



Note: *U.K. innovation hub
Source: L.E.K. analysis

brush assumptions about the type of work in each industry and lack nuance specific to any one industry.

2. **Anecdotal:** Many studies use simple surveys to ask participants in an industry to estimate the likely impact of AI automation. Unfortunately, most of these respondents are not experts in AI and may be somewhat biased given that they have a stake in the outcome.
3. **Incomplete data:** More academic studies that attempt to use a methodical, scientific approach often find that acquiring accurate data on the activities performed in an industry is extremely challenging — often leading to unreliable assumptions founded on incomplete datasets.

A systematic approach to assessing the impact of AI automation

Our systematic, data-driven and proprietary approach to assessing the potential impact of AI automation on a given industry follows these three steps:

Step 1: Understand, in granular detail, what people in your industry actually do today. One of the critical problems in other studies is a lack of good data on what people are doing. To facilitate that understanding, we start by breaking down labor into three levels: project, task and activity (see Figure 1).

In order to catalog the full spectrum of labor in an industry, we use an online survey, which, in combination with detailed discussions with industry participants, enables us to gather inputs on time requirements across the three levels of labor outlined above. Data is generated by role.

Step 2: For each individual activity performed by people in your industry, assess its susceptibility to automation by AI. In broad terms, the ability for AI to automate a task depends largely on the task's structure and complexity in relation to these characteristics: standardization, repeatability, creativity and emotional intelligence (see Figure 2).

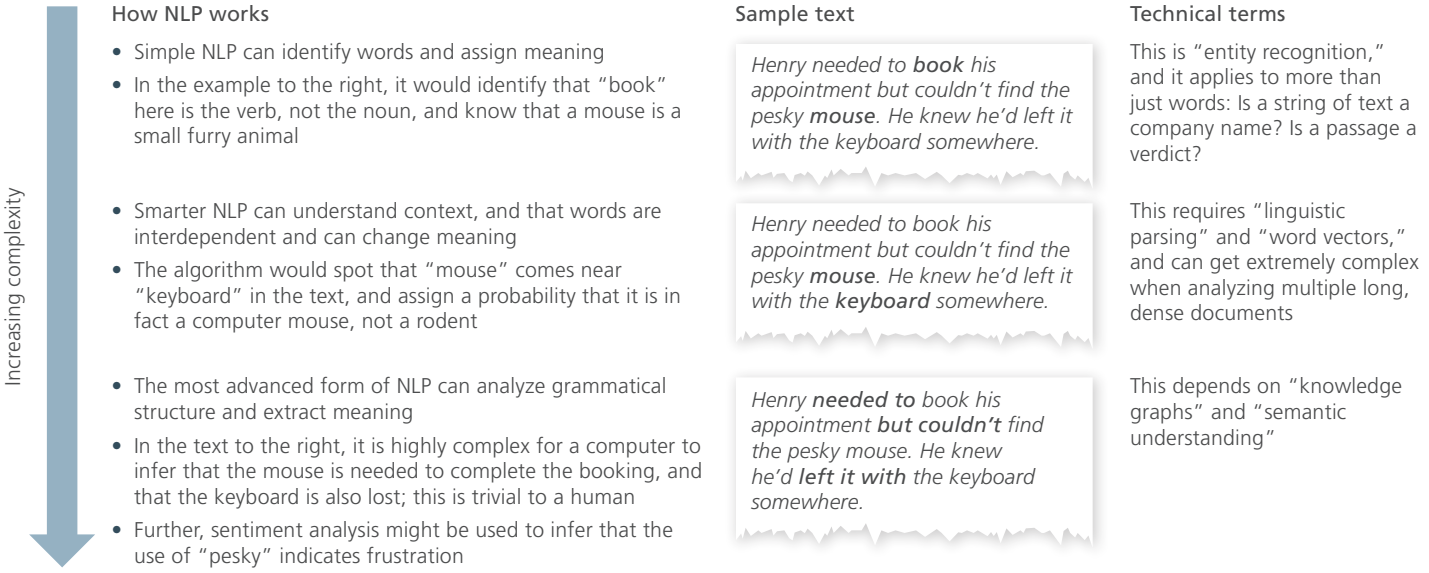
Through online surveys in combination with detailed discussions with industry participants, we can gather perspectives on how specific tasks vary in their expression of these characteristics. We combine this information with an understanding of the fundamental nature of specific activities (e.g., discussion and debate require a higher level of emotional intelligence than do reviewing and analyzing information).

Step 3: Examine the state of AI in your industry today, to inform the timeline over which disruption may occur. By this point, you will know what projects and tasks AI can potentially disrupt in the long term. But when will this disruption occur? What

Figure 3

Natural language processing (NLP) is a broad term that ranges from simple text processing to some of today's hardest computational challenges

NLP is the computational process of interpreting written text



Source: L.E.K. research and analysis

level of impact is likely in the near future? What requires action today? To determine this, we must have a full understanding of the technology itself — including its current state of maturity. In addition, we need to know how far along your industry is in adopting this technology and creating industry-specific use cases. Ultimately, the timeline is constrained by technological, commercial and structural barriers in your industry.

L.E.K. can bring to bear a deep understanding of the fundamentals of AI technologies and their disruption potential in the workplace. We can break down the jargon and explain technologies in a format that's easy for senior executives to digest. For example, consider natural language processing (NLP), a broad term that encompasses a wide range of capabilities, from simple text processing to some of today's hardest computational challenges (see Figure 3).

Through both primary and secondary research, we can supplement our broad AI knowledge with specific contextual understanding of your industry to reach an informed view.

The result: a systematic understanding of how AI will affect you — and when.

By implementing our recommendations following our thorough, data-driven evaluation, you will have insight into the specific projects, tasks and activities undertaken by your staff or your clients' staff and the impact of AI on those labor situations. You will know your susceptibility to automation based on an ideal, maximum-feasibility scenario — and also will have a realistic sense of the automation timeline in light of the expected pace of technology adoption in your industry and your progress in relation to that.

Contact

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