

History of Work... ...to the Future of Work

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**Workforce Training and
Education Coordinating Board**





What did Winston say?

“We must always look forward, but we have to understand our history in order to not repeat the mistakes of the past. I have seen too many instances where people continue to pursue wrong courses of action because they do not take the time to think critically about what has happened in the past”

-Winston Churchill



Up to 47 percent of US jobs are susceptible to computerization, according to a study from Oxford University



Late 1700s – Early 1800s

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**First Industrial
Revolution**



- **Technological** – Steam power, coal extraction, mechanization
- **Economic** – Shift away from agricultural economy to manufacturing
- **Demographic** – Urban migration



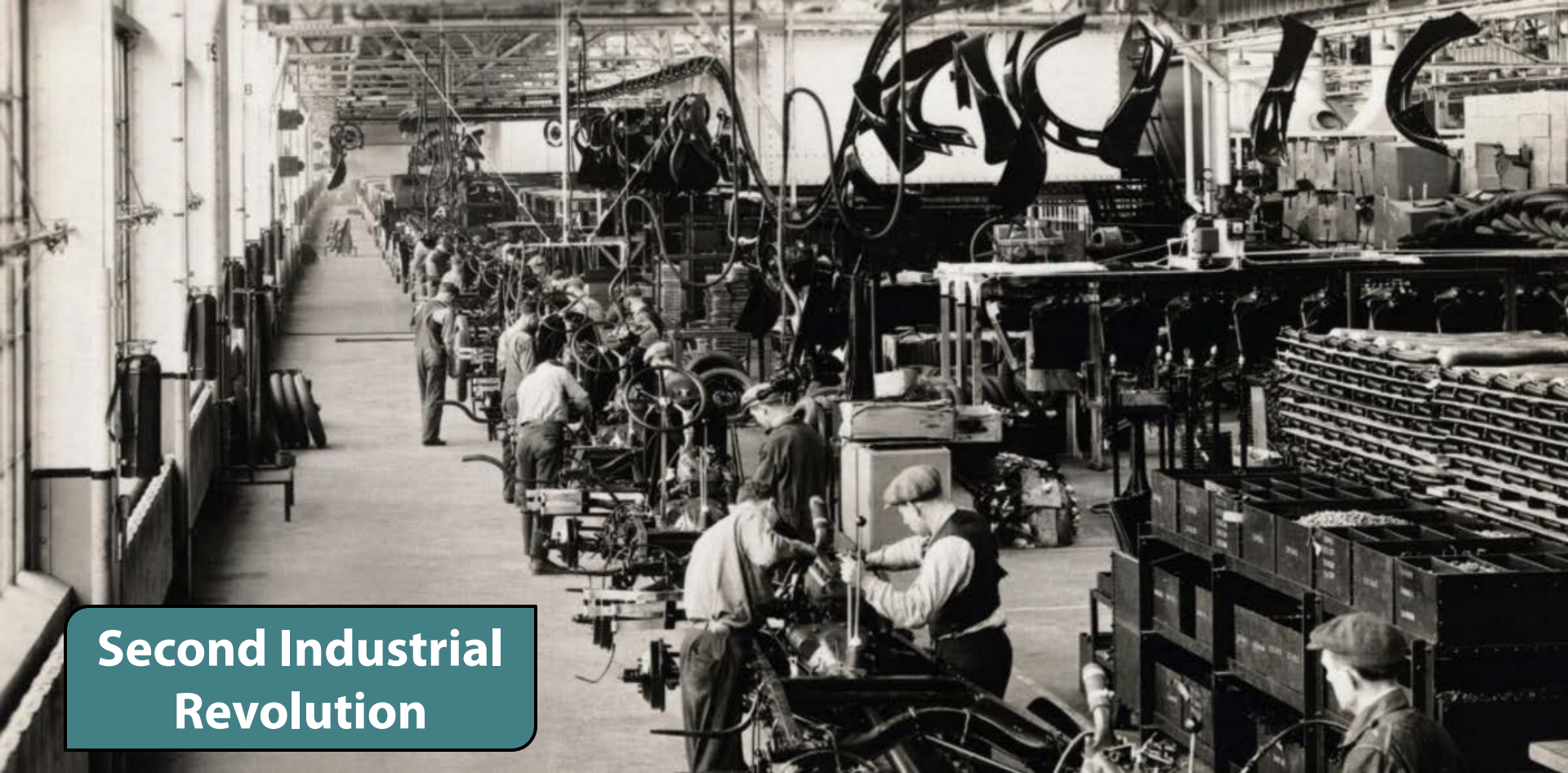


- Rise of social conscience issues across labor, business, and government
- Business moves into education and training of workforce



Early 1900s

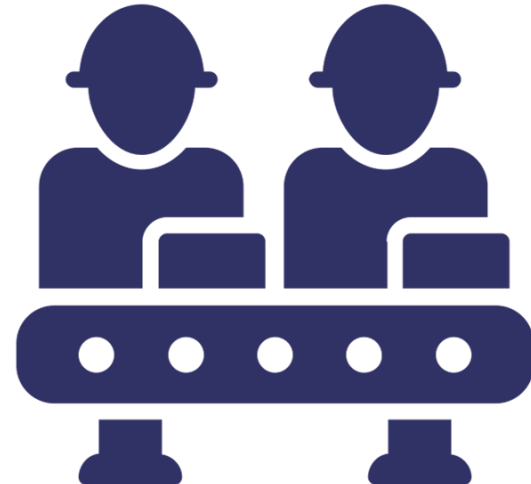
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**Second Industrial
Revolution**



- **Technological** – Assembly line, gasoline engine, oil extraction, metal alloys, plastics, chemical fertilizers
- **Economic** – Distribution of ownership through stocks, distribution of lifestyle and leisure goods and technology
- **Demographic** – Continued urban migration





Policy Implications: early 1900s

- Shift by government away from laissez-faire into social and economic arenas
- Social Security Act
- Wagner-Peyser Act
- OSHA
- Rise of organized labor and the National Labor Relations Act



1960s – 2000s

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**Third Industrial
Revolution**



Third Industrial Revolution: 1960s – 2000s

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- **Technological** – transistor, microprocessor, semiconductors, internet, mainframe computer, nuclear and renewable energy
- **Economic** – Digital technology disrupts traditional industries, automated production and supply chains, increased efficiency
- **Demographic** – Disruption of traditional employer-employee relationship, outsourcing, “gig” economy, increased consumer choice, convenience

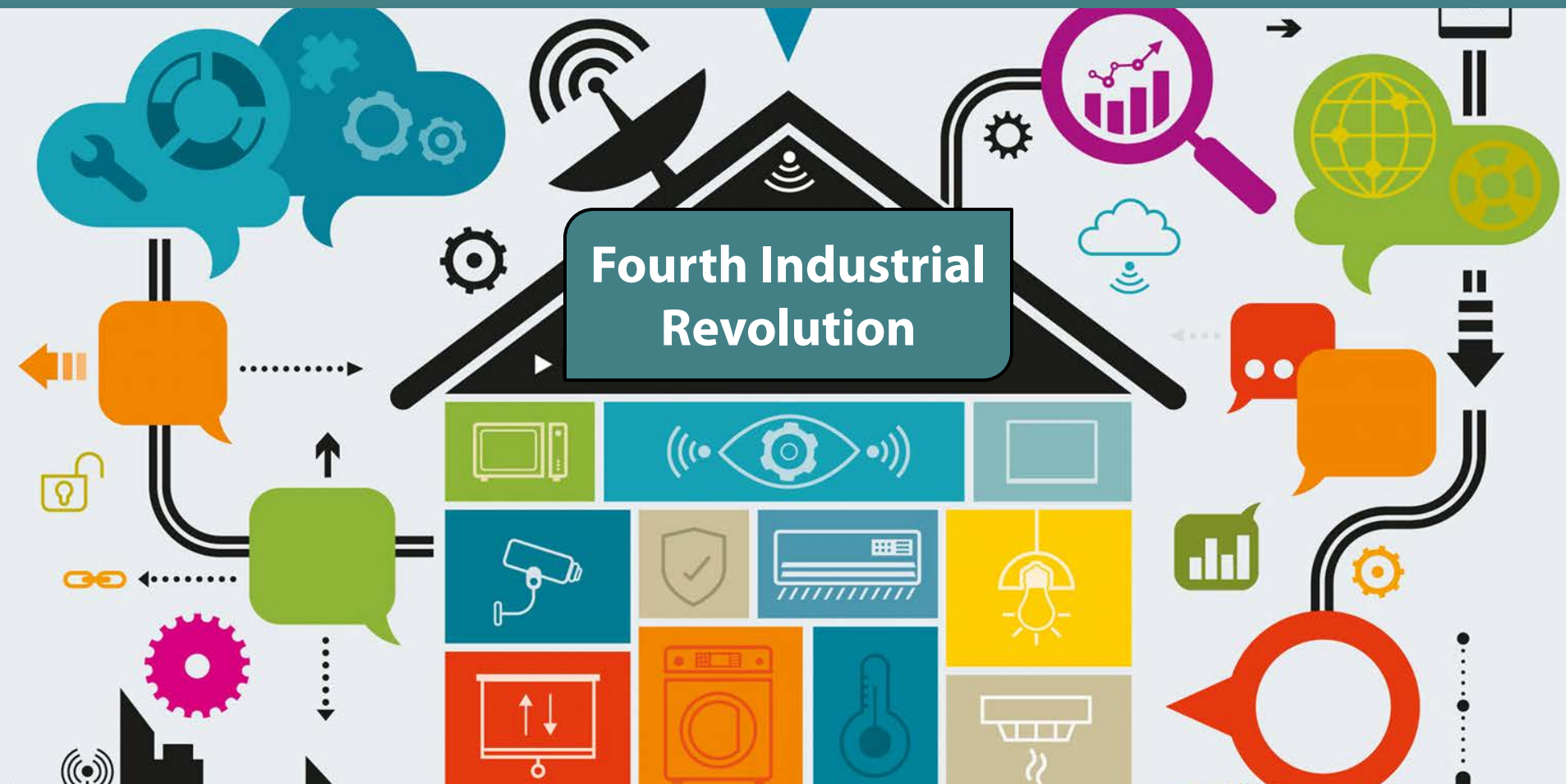




- Migration of investment in research and development from public sector to private
- Business reduces investments in education and training programs for workers
- Increased interconnection and globalization of trade



Present Day





- **Technological** – genetic sequencing and editing, artificial intelligence, decentralized power production, miniaturized sensors, 3D printing, big data analytics, the Internet of Things, autonomous vehicles, nanotechnology, biotechnology, materials science, energy storage, machine learning, natural language processing, quantum computing, big data.....
- **Economic** –Ongoing disruption of labor market and traditional business models
- **Demographic** – Further drift from traditional work roles, shift towards contract and “gig” work



- Increased demand for flexible work conditions
- Updating social support services in line with new employment relationships
- Re-training of current workforce
- Adopting more flexible education and training programs to meet rapidly changing needs of business
- Geopolitical and environmental threats



Task Force Must Consider Recommendations that:

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Establish **Collaborative Applied Research** opportunities between education institutions and businesses. This allows instructional staff and students to learn about new technology while at the same time helping companies adopt this technology.

Support a **talent development pipeline** and **lifelong learning structure**, from K-12 through retirement, for all workers and industries:

- Washington's young people will navigate careers and workplaces of the future.
- Workers keep their skills up-to-date or retrain for new careers when needed.
- Education and training credentials are portable, transferable, and cost and time efficient.
- Instructional staff keep pace with changes in their disciplines and related occupations.

Enable **Sustainable Industry Sector Partnerships**, so employers and workers can collaborate to support their sector's growth. Support consortia of multiple employers within an industry to convene to identify common skill gaps and other issues, and work together with their workers and the public sector to find solutions.

Questions?

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