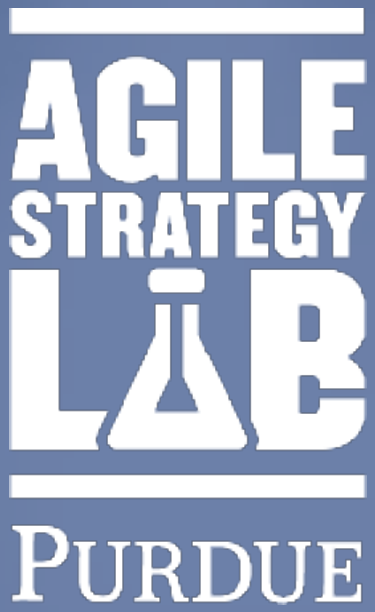
JUMPING THE CURVE IN WORKFORCE



Ed Morrison

Director

Purdue Agile Strategy Lab

October 19,2018

Our Current Situation

Symptoms of a Broken System

All around us, we see symptoms of broken education and workforce development systems. Skill shortages are touching every industry.

Consider these headlines taken from the news during the week of October 1.

- Local manufacturers grapple with tariffs, workforce shortages
- Can industry bridge the government cyber skills gap?
- Skills shortages a major cyber security risk
- Recruiting and retaining top talent remains biggest HR challenge
- More staff training is vital

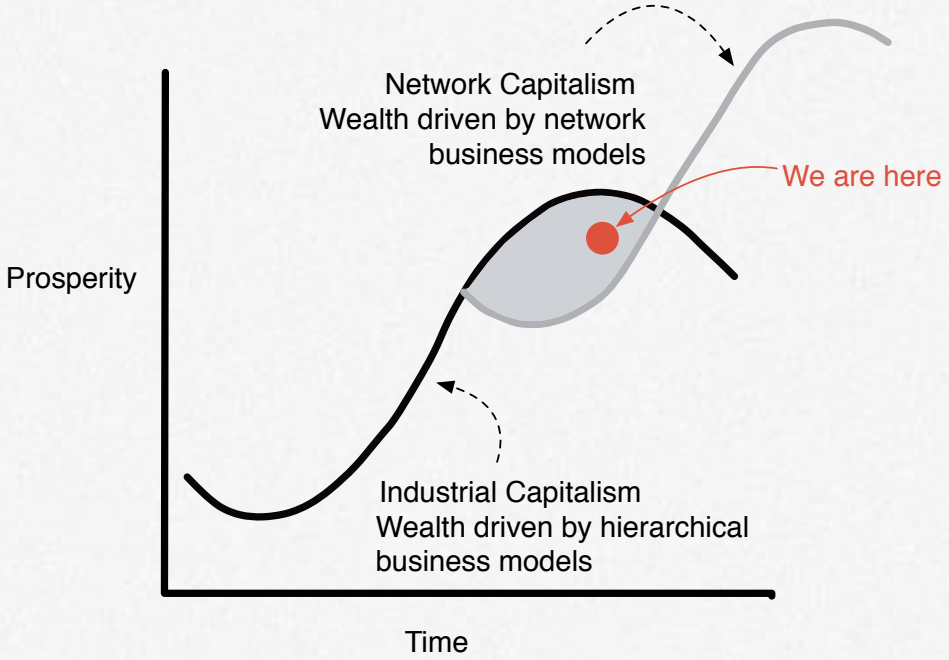
Why do we see such widespread skill shortages? More important, what can be done about this challenge? This presentation addresses these questions.

The Transformation Underway in Our Economy

For over 30 years, our economy has been experiencing a profound transformation from an industrial age to a knowledge age.

This transformation is accelerating. It has profound implications for the way in which work is organized, how are companies and organizations can be managed, and how effective government policy can be designed.

The nature of this shift can best be explained by using S Curves.



Our Failure to Adapt Quickly

Our industrial-era systems are remarkably stable. But the command-and-control mindset that drives these hierarchical systems is resistant to learning and adaptation.

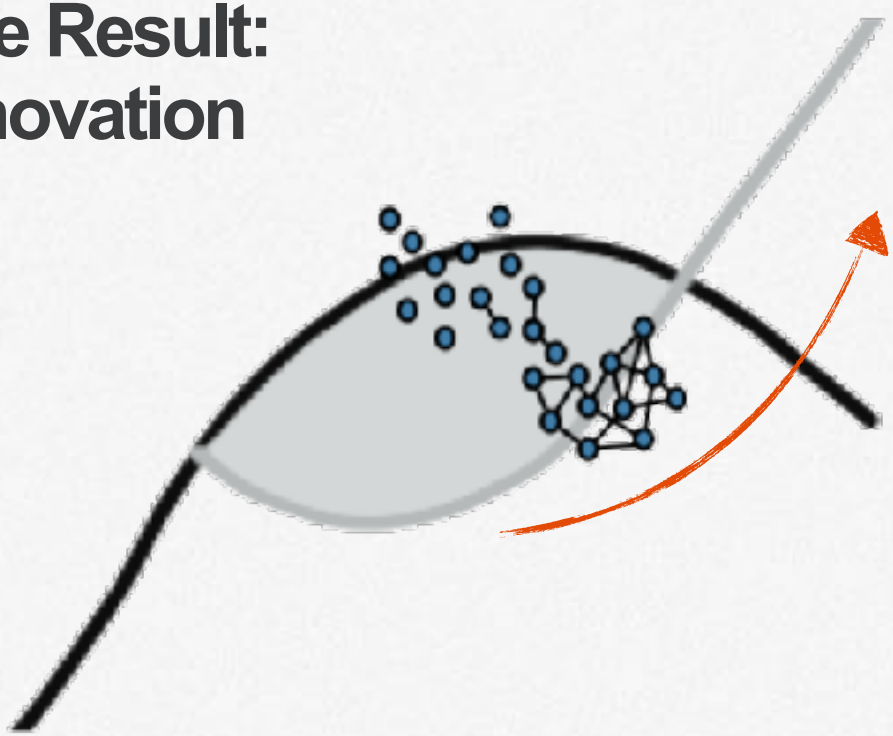
Hierarchies continue to dominate the way most organizations are designed and managed.

While they strive for predictable results, they do not adapt well the significant changes in the environment.

As a consequence, our public, private and nonprofit institutions have not adapted well to the deep changes underlying the transformation of our economy.

The Challenge: Jumping the Curve

The Result: Innovation



We hear a lot about agility today. But what does this really mean?

With S Curves, agility means the ability to link and leverage an organization's assets to define new opportunities. As people link and leverage relentlessly, new opportunities to innovate emerge.

Industrial Thinking About Education and Workforce

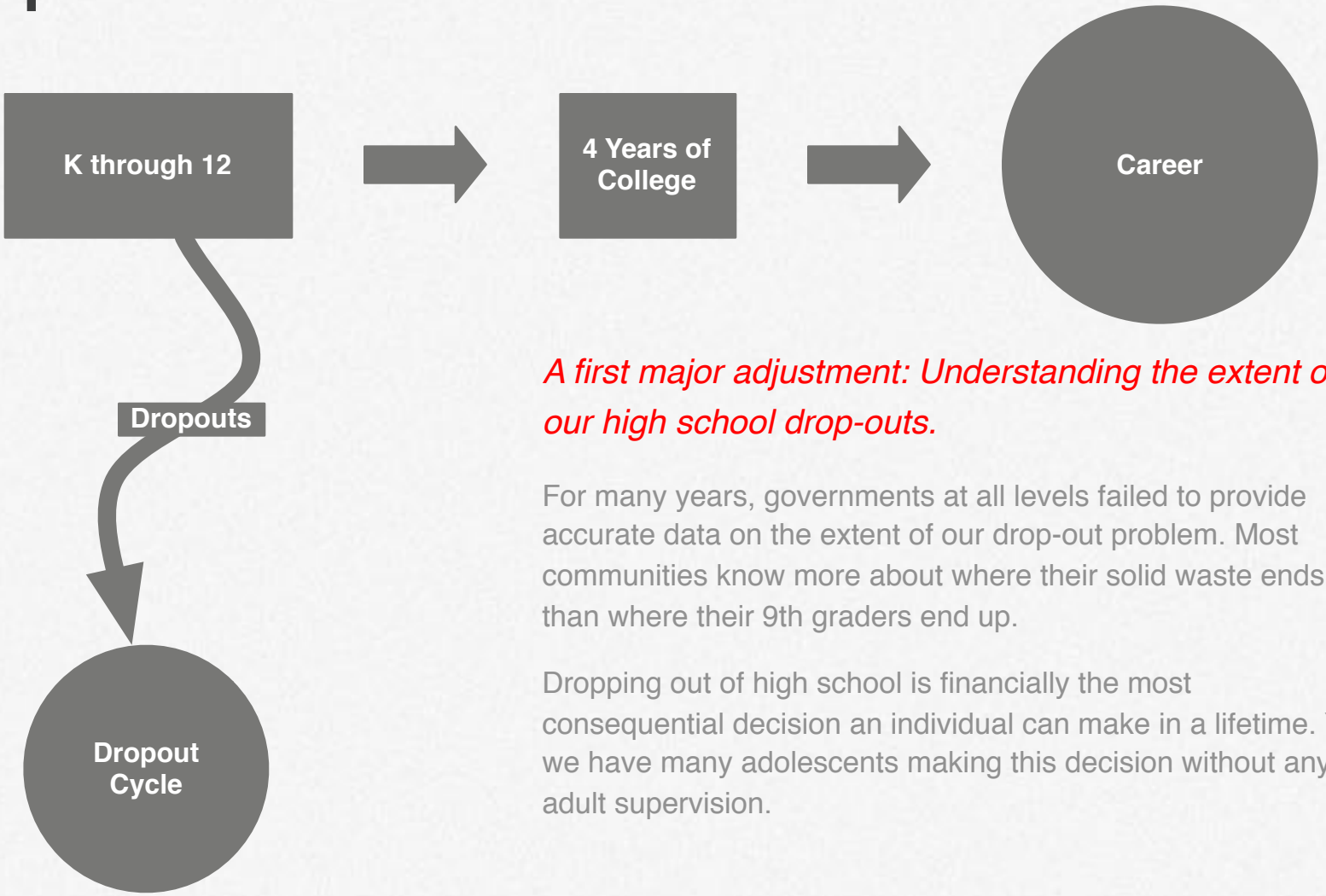
In the Industrial era our dominant mental model of education and workforce was very simple. Inaccurate, to be sure. But convenient and simple.

The reality of career paths — past, present and emerging — is far more complex. To make adjustments, we need a far clearer view of the system of education and workforce development.

We will not be able to “jump the curve” until we have a more accurate picture of the education, workforce development and career pathways in our economy.

Seeing Our Situation More Accurately

Getting a Handle on Drop-Outs

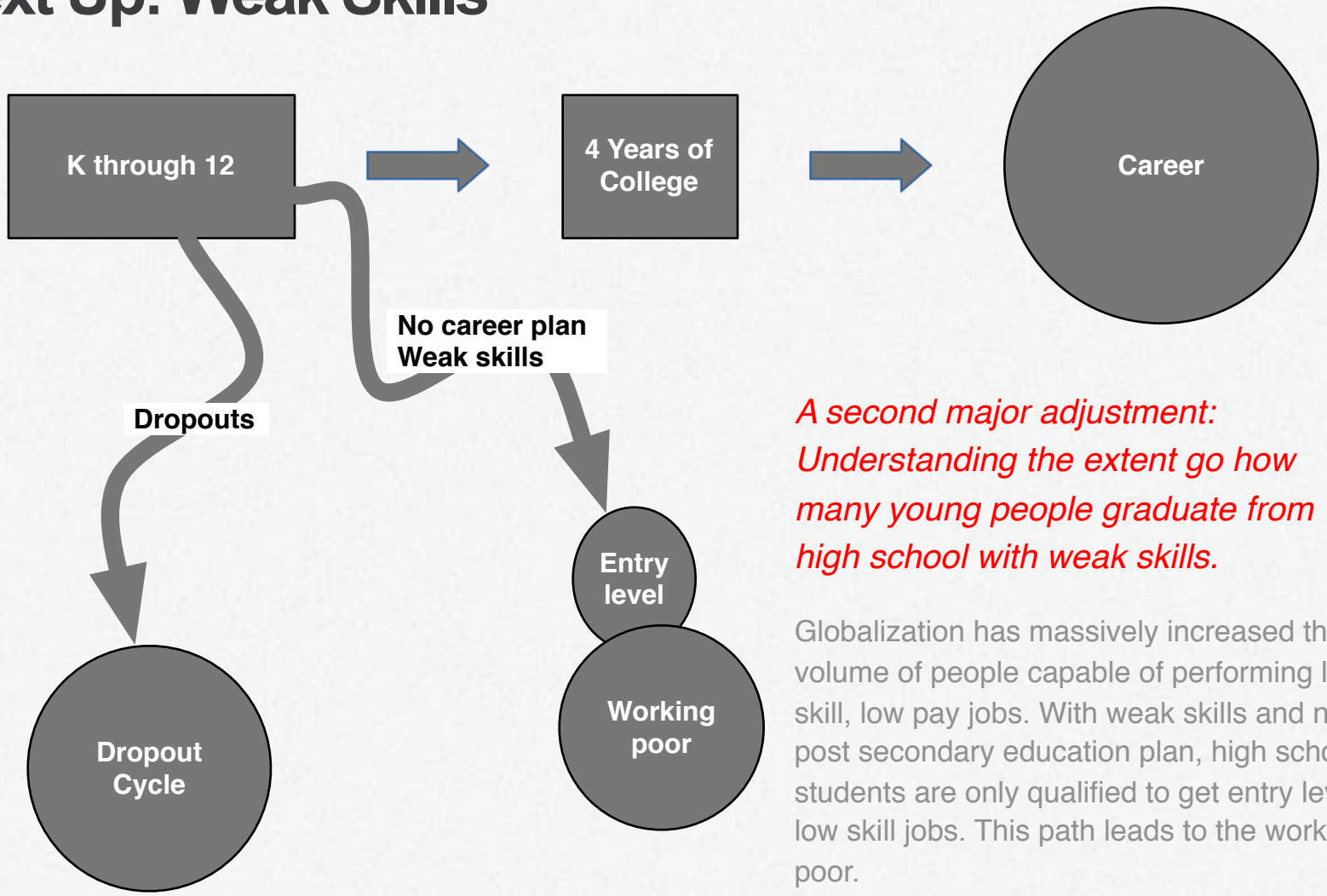


A first major adjustment: Understanding the extent of our high school drop-outs.

For many years, governments at all levels failed to provide accurate data on the extent of our drop-out problem. Most communities know more about where their solid waste ends up than where their 9th graders end up.

Dropping out of high school is financially the most consequential decision an individual can make in a lifetime. Yet, we have many adolescents making this decision without any adult supervision.

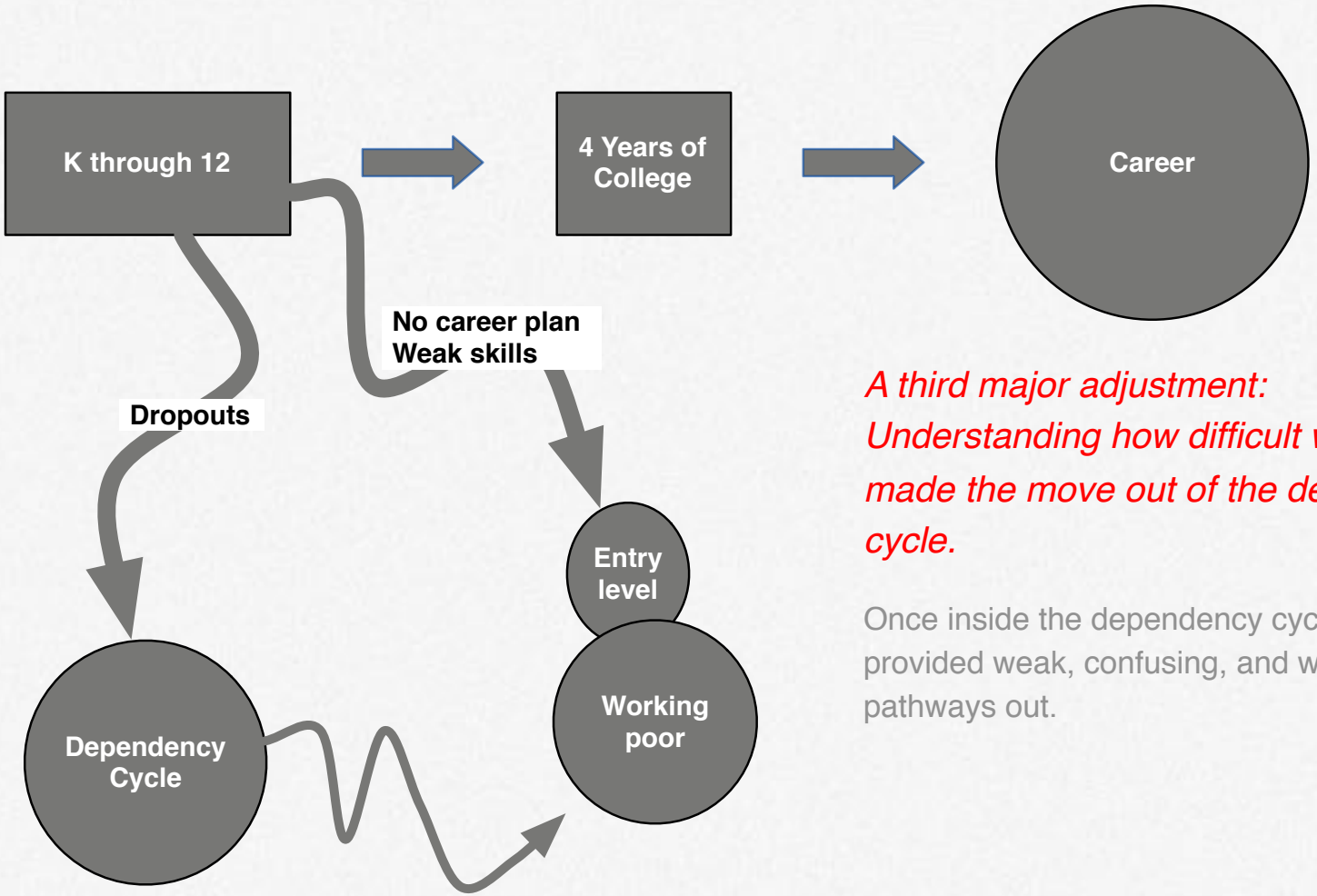
Next Up: Weak Skills



A second major adjustment: Understanding the extent go how many young people graduate from high school with weak skills.

Globalization has massively increased the volume of people capable of performing low skill, low pay jobs. With weak skills and no post secondary education plan, high school students are only qualified to get entry level, low skill jobs. This path leads to the working poor.

The Dependency Cycle Trap



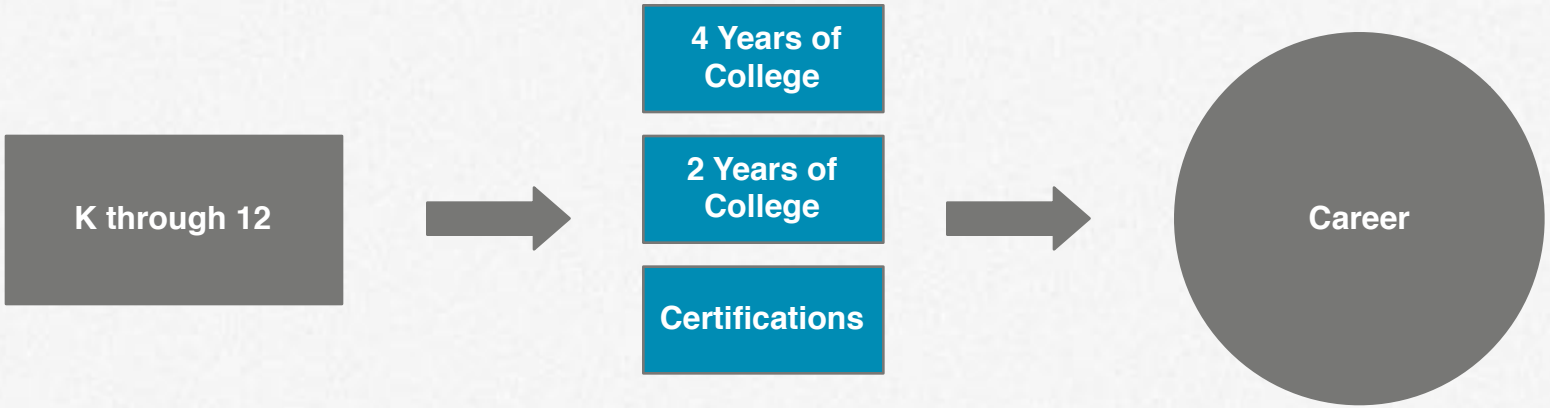
A third major adjustment: Understanding how difficult we have made the move out of the dependency cycle.

Once inside the dependency cycle, we have provided weak, confusing, and wasteful pathways out.

Post-Secondary Education is Essential

A fourth major adjustment: Understanding the importance and variety of post-secondary education.

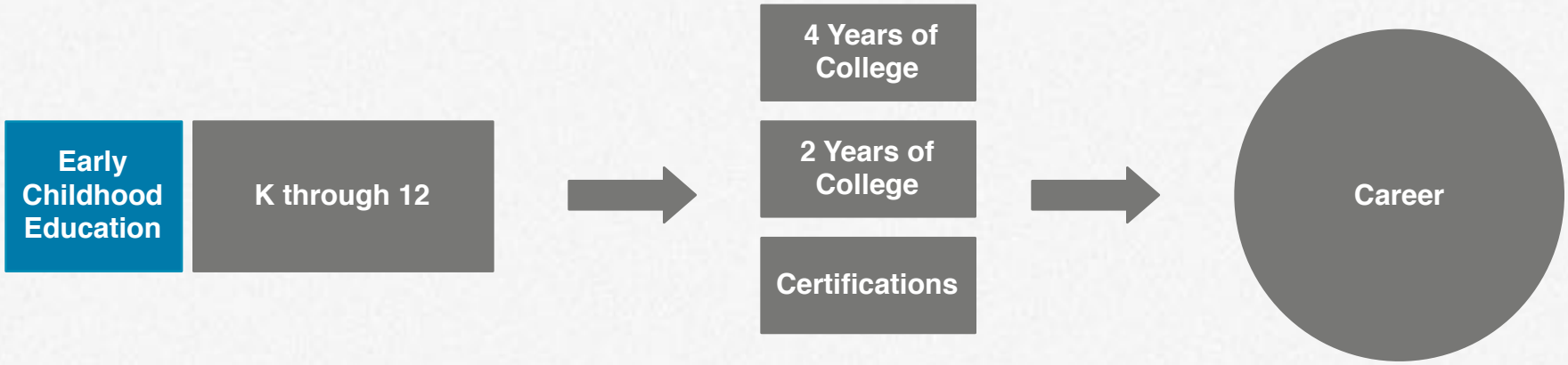
In today's knowledge economy, students need a post secondary education. There are a wide variety of options, But many communities ignore this important message.



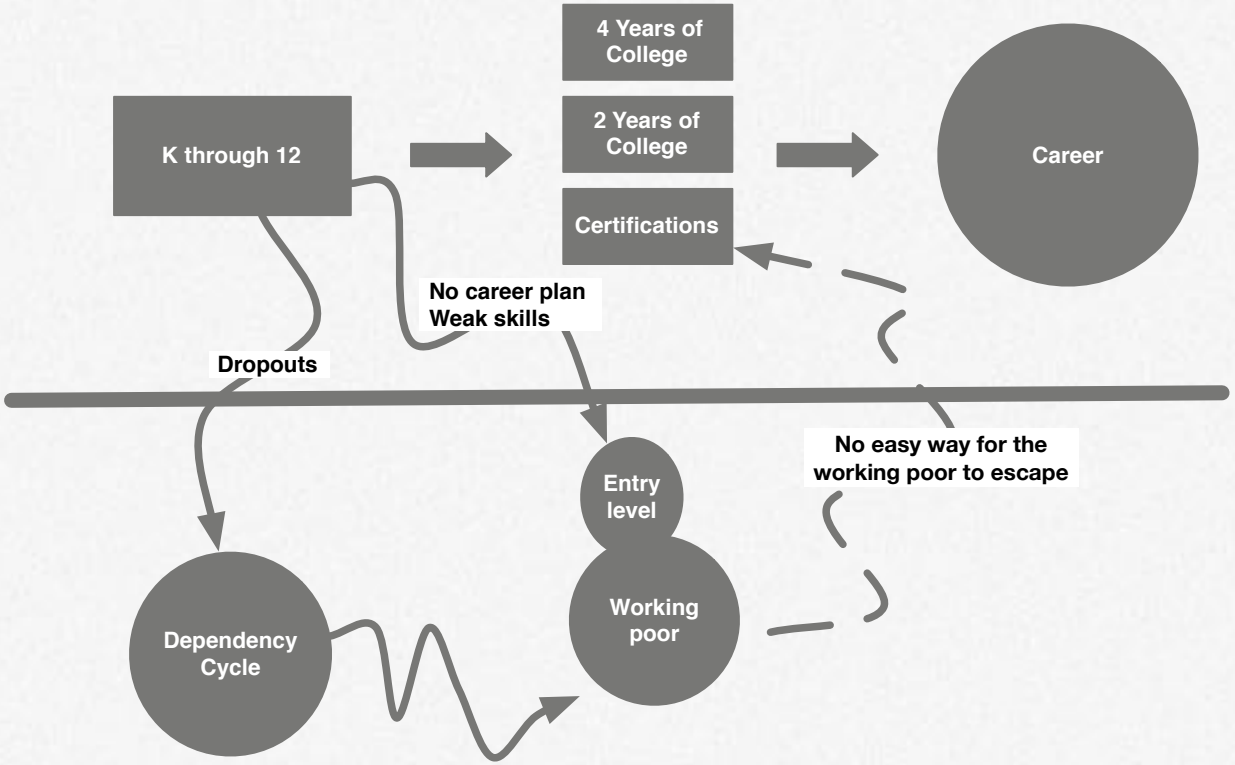
The High Value of Pre-School

Early childhood education is a remarkably valuable investment. It makes sense: from 0 to 3 years old, a child's brain is developing rapidly.

One of the highest value investments we can make in education comes in early childhood As former Kentucky Governor Martha Layne Collins emphasized as she pushed Southern states to adopt pre-school: "Workforce development begins with a pregnant mother."



Weak Pathways for the Working Poor



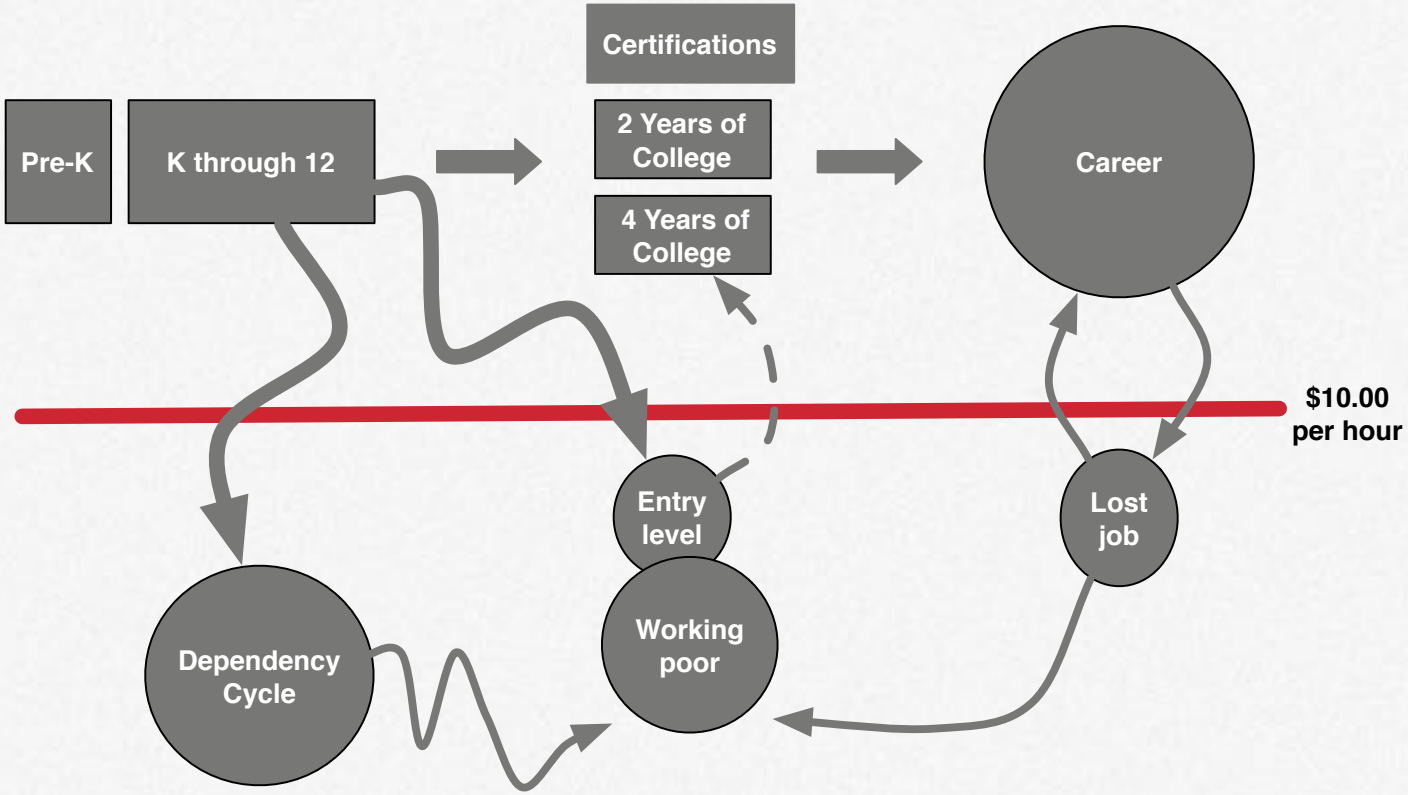
Another major adjustment: Understanding how difficult we have made the move out of the working poor cycle.

The working poor face major challenges as well. While post secondary education is a path to career jobs, we do not make it easy for working poor to continue their education.

Losing a Career Job Means Getting New Skills

Many people who lose their career jobs do not have the skills they need to get another career job.

We do not have productive pathways to get people back into the workforce once they have lost their jobs. The current workforce development system is cumbersome and complex.



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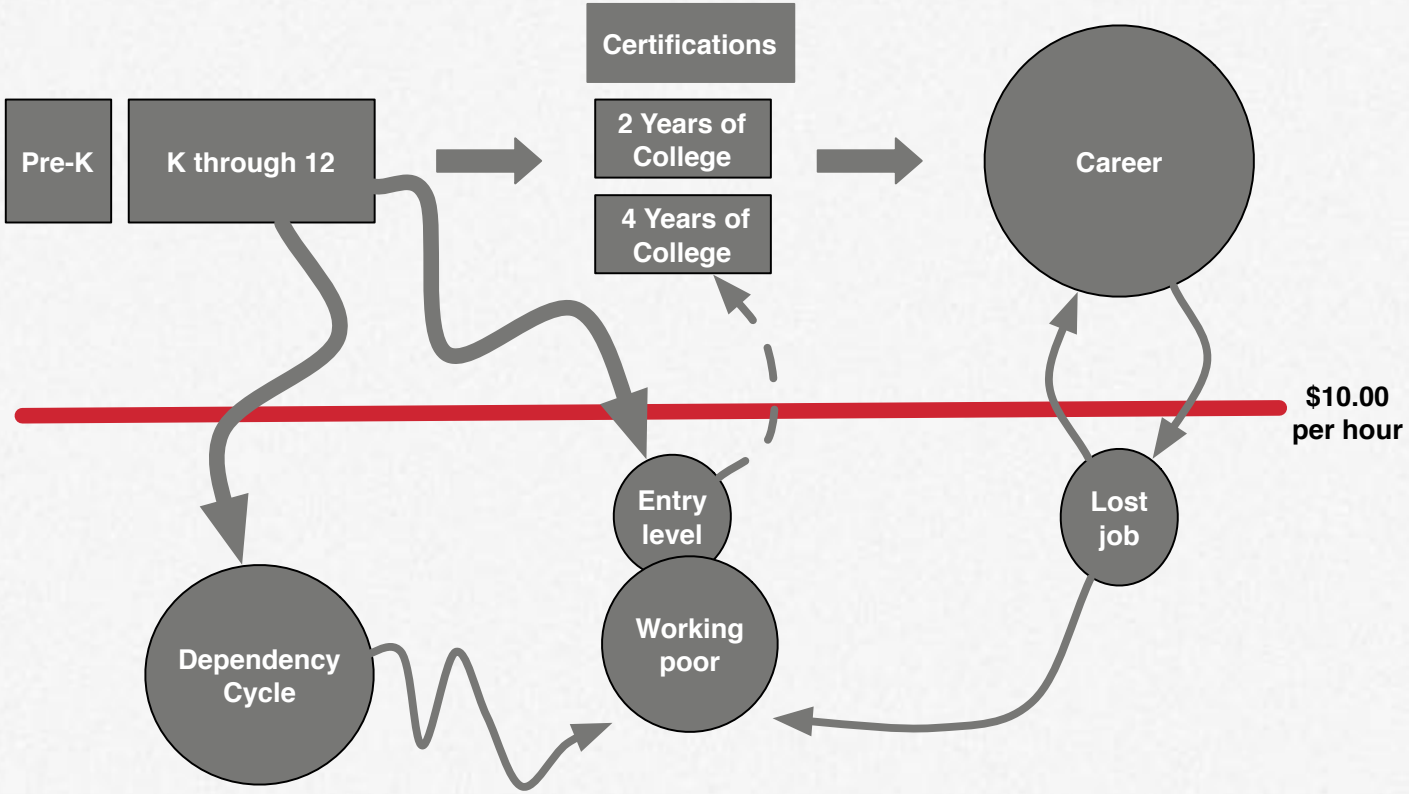
We Are Not Producing Enough People with Career Skills

Each regional economy is different, but here are some rules of thumb.

Most regional economies have between 70% and 80% of their jobs above the line of $10 per hour. Yet, for decades, we have been producing anywhere from 30% to 60% of people with weak skills.The result: widespread skill shortages.



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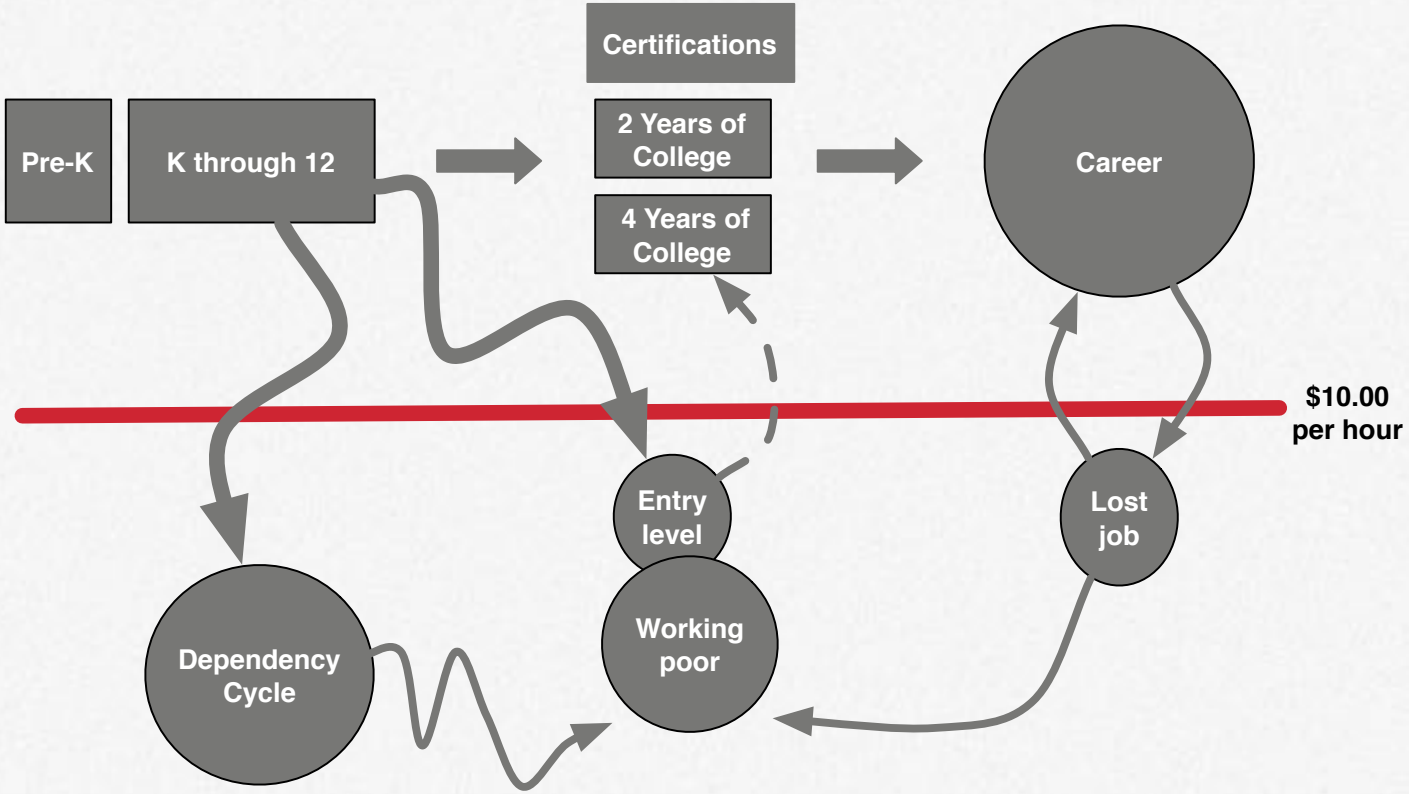
This Situation is No One's Fault

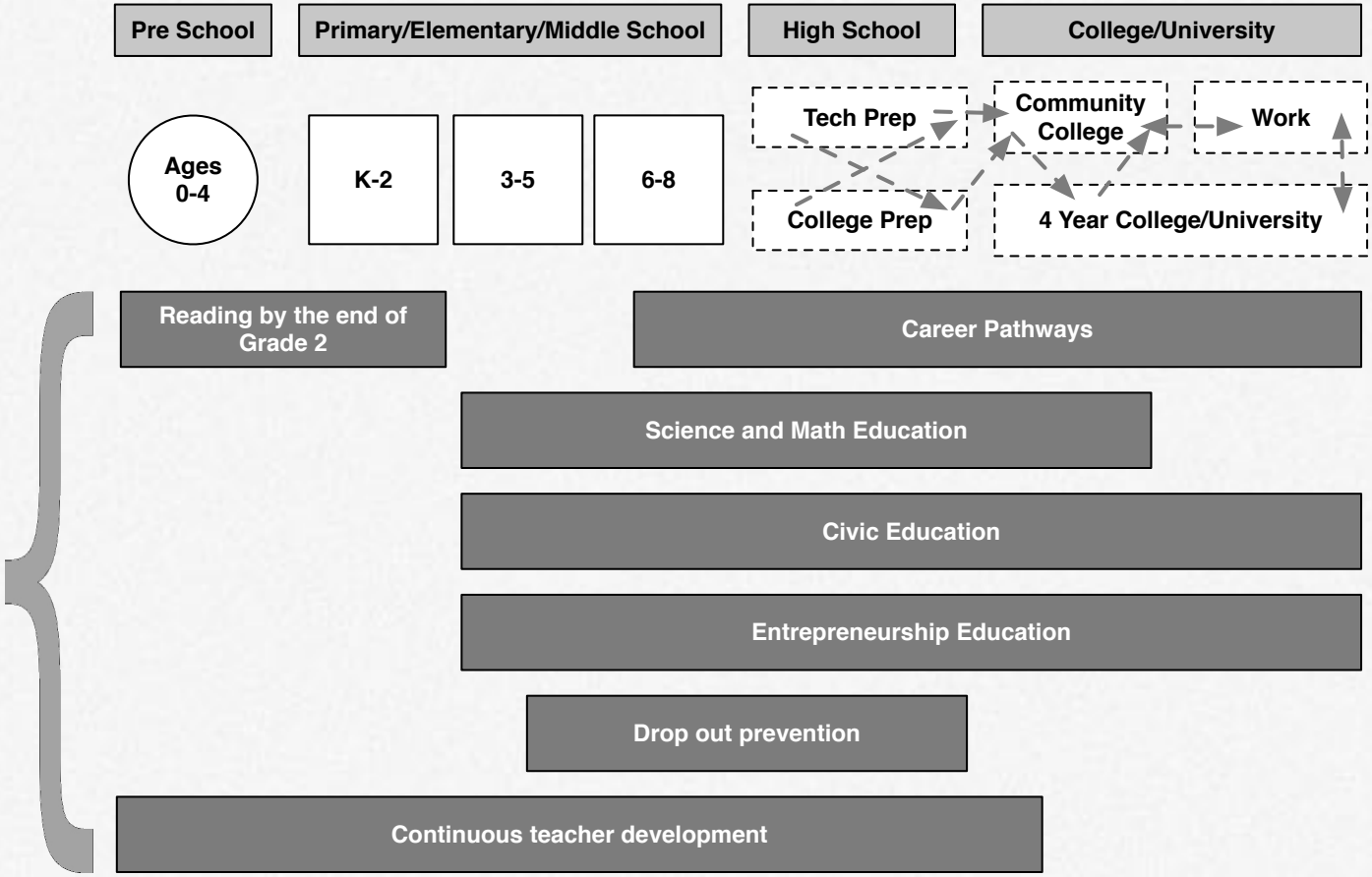
We are attempting to address Network Challenges with Hierarchical Mindsets.

Every time we get into arguments about who is at fault in this situation, we are missing an essential point. We need to imagine new systems, new approaches to education and workforce. We need to design "what's next".



Designing What's Next

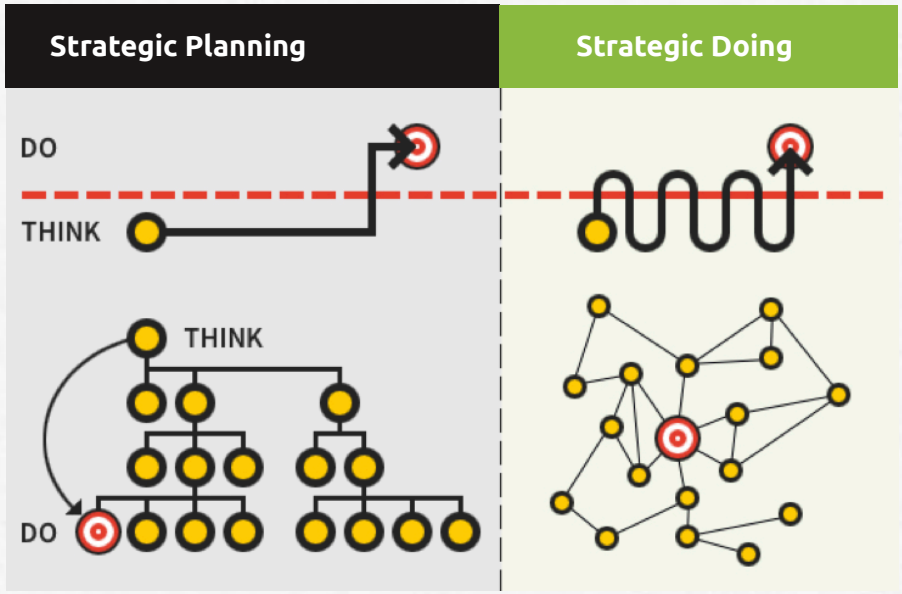
Here's an example of what a new system might start to look like: A system that is more open, flexible, agile, and responsive to both learners and employers.



Schools need outside collaborations to provide high quality services to students and teachers

Collaborative Leadership and Agile Strategy

Strategy is Different in Networks



To design and guide new education nd workforce networks, we need a new approach to strategy. Traditional strategic planning was designed for hierarchical, command and control organizations.

Since 2005, Purdue has been incubating a new strategy discipline specifically designed for open, loosely connected networks, Called Strategic Doing, it enables participants to form collaborations quickly and move them toward measurable outcomes.

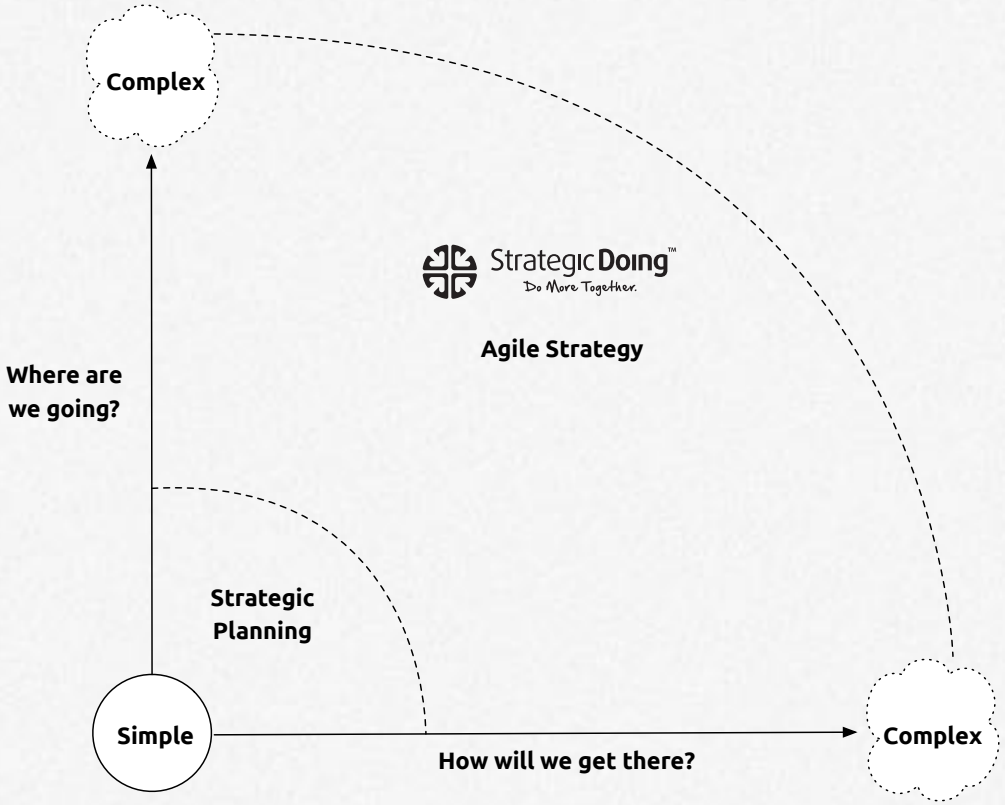
It does this by teaching the skills of how to form collaborations by designing and guiding the conversations that lead to these collaborations.

Rooted in open software development, Strategic Doing relies on a set of simple rules to guide the process.

Why Strategic Doing?

Effective strategy answers two questions: Where are we going? How will we get there?.

With increasing uncertainty and complexity, we need to define our strategies repeatedly. To do that, Strategic Doing provides a simple framework to guide these strategic conversations.



Source: Ed Morrison, Purdue Agile Strategy Lab

Strategic Doing Cycle

Ten Rules of Strategic Doing

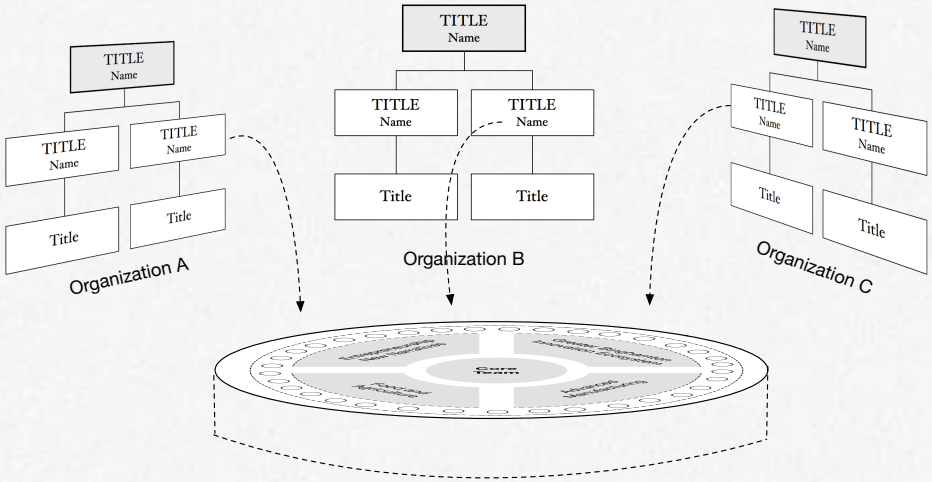
Open Innovation, Platforms and Ecosystems

Strategic Doing is "the most clear and concise open innovation process I've seen."

Mark Scotland
CEO
4.0 Analytics

To address our education and workforce challenges, we need a new approach to accelerate innovation. Three concepts define the opportunity: open innovation, platforms, and ecosystems.

- Open innovation means engaging multiple organizations in a disciplined process to design something new and valuable.
- To form these collaborations, we need new platforms — places where people come together regularly to design what's next.
- As new collaborations form, new ecosystems emerge. Within these ecosystems, innovation accelerates.



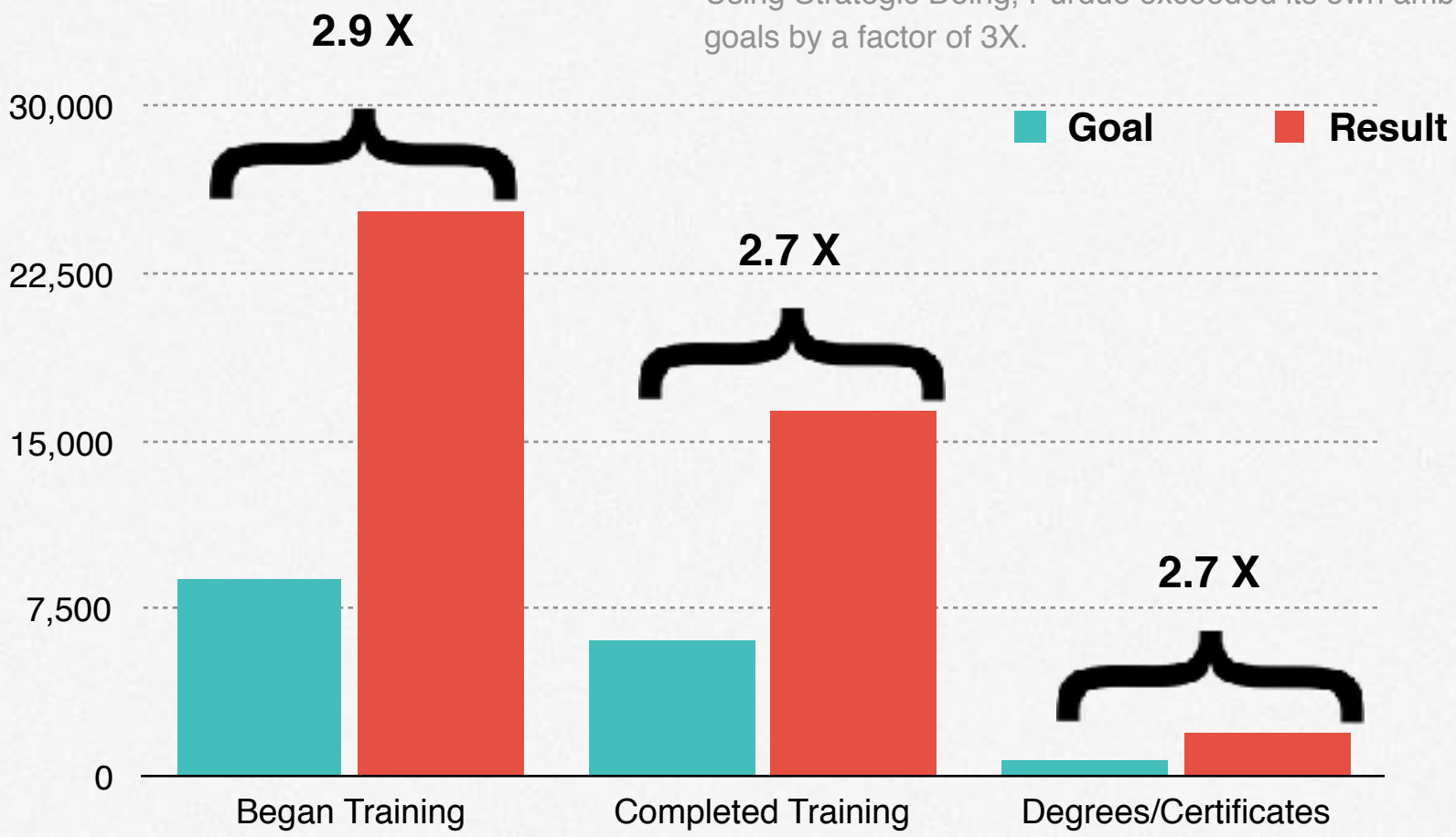
The Purdue approach to open innovation relies on platforms.The strategic conversations on the platform are artfully designed to test hypotheses and build trust. The conversations take place within 2 to 3 hour workshops.

Some Proof Points

Creating New Workforce Partnerships

Purdue participated in a federal program to transform the regional workforce system in North Central Indiana.

- Purdue received 8% of the money awarded nationally ad produced 40% of the national results.
- Using Strategic Doing, Purdue exceeded its own ambitions goals by a factor of 3X.



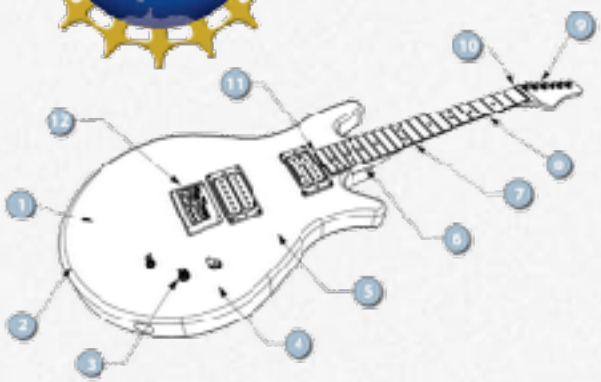
Example: Project Lead the Way

As part of the project, Purdue accelerated the formation of Project Lead the Way high schools.

- PLTW is a a nationally recognized pre-engineering program.
- Indiana now has the highest concentration of these school s in the country.
- After this success, PLTW moved its headquarters to Indianapolis.

PROJECT LEAD THE WAY
PLTW

Example: National STEM Guitar Project



Another example of Strategic Doing: Mark French, a professor in Purdue's School of Engineering Technology, proposed an idea for an innovative summer camp.

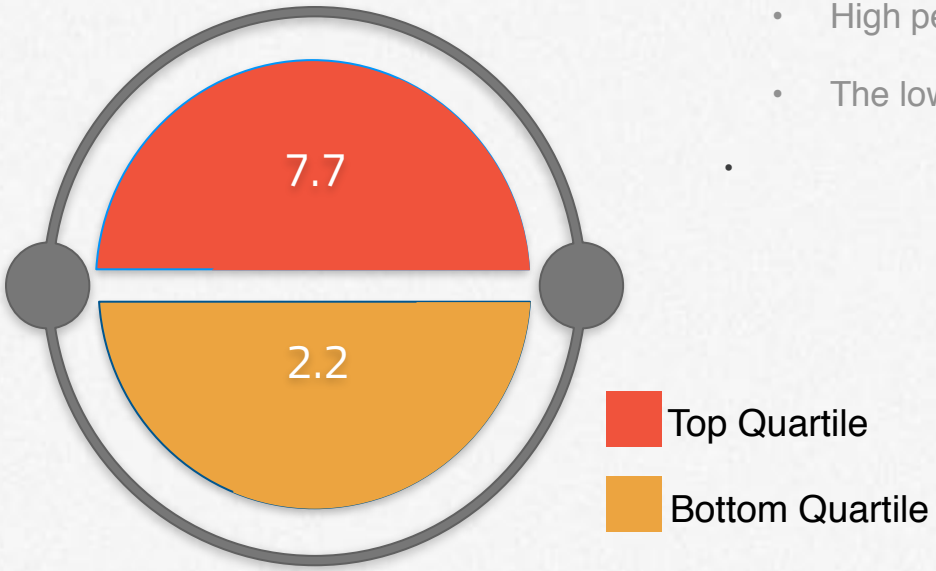
- Mark proposed to introduce high school students to STEM skills by having them make their own electric guitar.
- From this small beginning with 15 students, Mark's idea caught fire.
- The National Science Foundation now spoors these camps all over the country.

STEM Guitar
guitarbuilding.org

Transforming Engineering Education

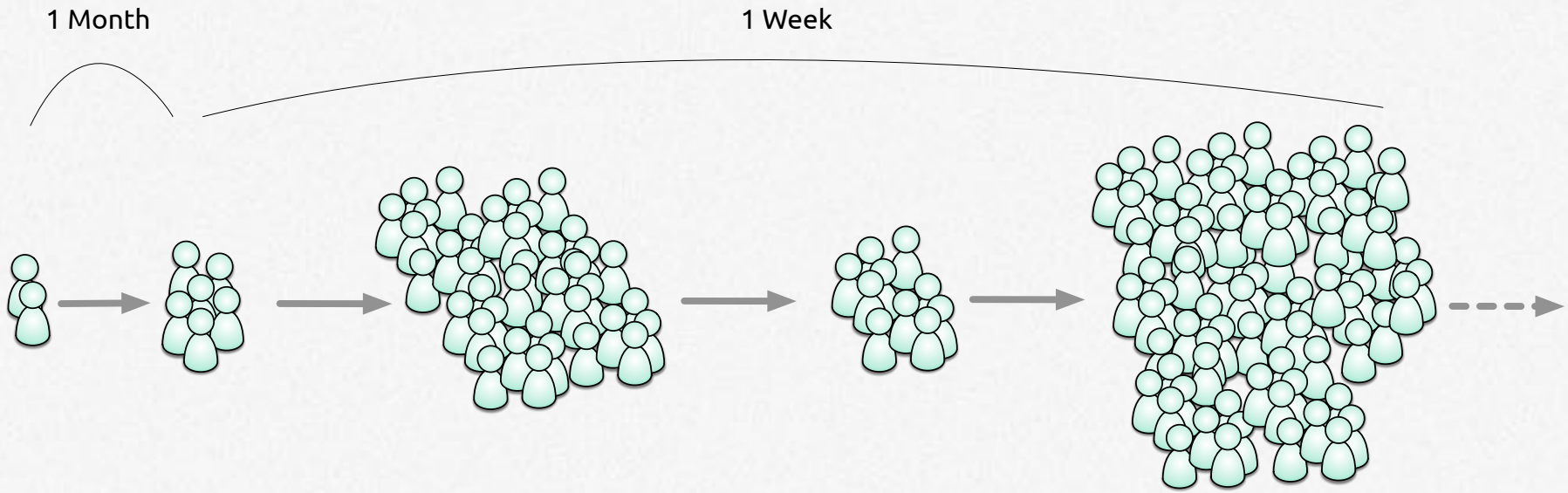
The Purdue Agile Lab introduced Strategic Doing to 50 university teams. Each team focused on transforming undergraduate engineering education.

- These 50 teams launched over .500 collaborations.
- 37 university teams subsequently participated in a research project.
- The highest performing teams followed the Strategic Doing discipline most closely.
  - High performing teams followed about 8 of the rules;
  - The lowest performing teams followed only 2 of the rules.
-



Scaling the Recovery in Puerto Rico

Because we can teach this new discipline, we can scale it quickly. Here's an example from our work on the recovery in Puerto Rico.



Two people…

…organized a team of 6 faculty to travel to Puerto Rico…

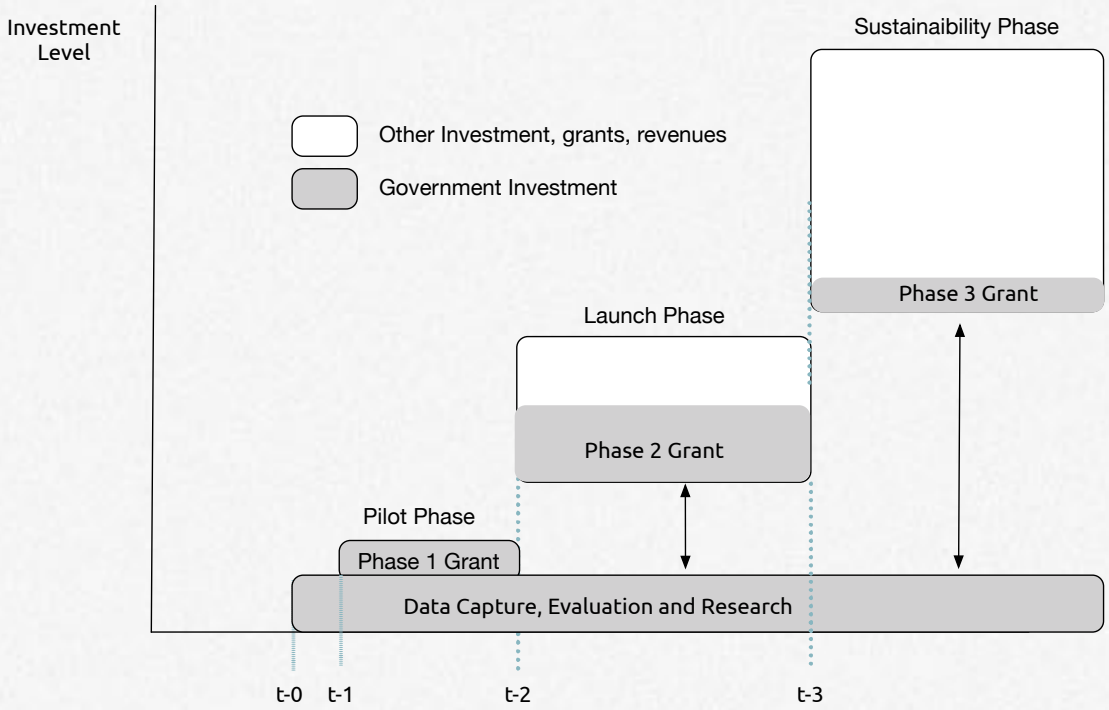
…to teach 40 people the skills of Strategic Doing over 2.5 days

Then in 6 hours 10 graduates…

…guided 60 civic leaders to design 7 complex collaborations, each with a strategic action plan.

Agile Policy

Agile Policy



t-0 Starting of Data Capture and Evaluation Protocols, Investment internal to Government

t-1 Phase 1 Exploratory Grant: Test Ecosystem Model Assumptions; Prepare investment case

t-2 Phase 2 Launch Grant: Requires co-investment

t-3 Phase 3 Data and Evaluation Grant: Data capture grant on-going

Source: Ed Morrison, Purdue Agile Strategy Lab

To design what's next, we need new approaches to education and workforce development policy that are more adaptive and experimental.

Designing these new policies does not need to sacrifice accountability. Indeed, by leveraging transparency, policy-making can be more open and responsive.

Learn More

Contact Information

The next step is up to you. If this approach to innovation looks potentially valuable to your organization, contact us to discuss designing a pilot project.

Organizations interested in new ways to think about education and work force development Ed Morrison, Director, Purdue Agile Strategy Lab (edmorrison@purdue.edu).

The Purdue Agile Strategy Lab is a component of the School for Engineering Technology within the Purdue Polytechnic Institute. The Lab web site is: www.agilestrategylab.org

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