



Swiss Apprenticeship Model

An Employer Driven System of Education & Training



Swiss Profile

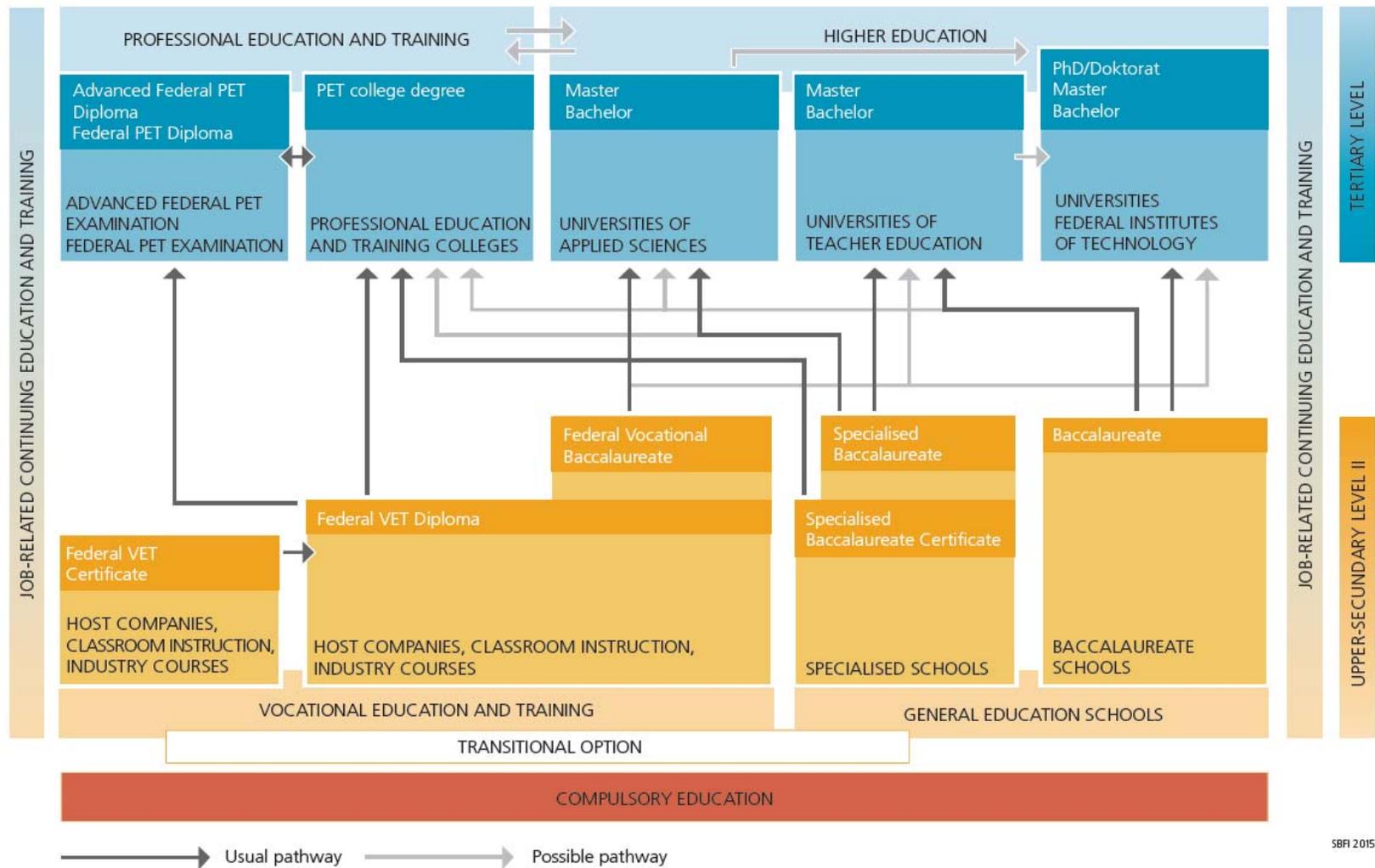
- 3.2% unemployment
- <4% youth unemployment rate
- 8.2 million population
- 580,000 businesses
- 70% of all students choose apprenticeships, no stigma – most CEO's have been apprentices
- 40% of companies participate in the the program
- About 97% of all students have graduated with a VET Diploma (Vocational Education & Training) or other high school degree



Apprenticeship System



- Similar coursework Kindergarten through 10th grade.
- Practical work experience education starts at age 15 and typically lasts 2-4 years. Hybrid of HS and community college vocational training.
- 3-4 days/week hands on work experience , 1-2 days/week in classroom
- Company nor student are bound to each other after training.
- Permeable system that allows youth to choose a career pathway, change industries and move on to specialized certifications or higher education.



The permeable system allows for all paths to result in whatever degree of education is desired with little to no backtracking, duplicative education, or dead-ends.

The Swiss System- Theory & Practice

- Dual track education of theory (classroom) and practice (on-the-job)
- VET students earn wages while working for host companies
- Companies teach students practical skills related to nationally approved training guidelines
- Intercompany training centers provide the “early practice” for students to learn industry specific skills and knowledge

Practical skills



Theoretical skills



In-company training

Learning on the job

3 to 4 days per week

Intercompany courses

Basic skills

Block courses
40 to 50 days
(1st and 2nd year)

Vocational schools

Theoretical knowledge

1 to 2 days per week

System Elements

- Federal responsibilities: system oversight, apprenticeship accreditation and testing
- Cantons (states): Local governments similar to our School Districts that are responsible for running the classroom curriculum and providing career guidance to students
- Private Companies: Over 230 approved occupations trained in apprenticeships at over 40% of all companies in Switzerland
- Many models for private sector training but most industry clusters belong to an association that provides standardized training approved by both industry and government
- Industry Associations include banking & finance, healthcare, technology, transportation, manufacturing, hospitality, etc.

The The Role of Associations

SwissMEM is Switzerland's Engineering and Manufacturing Association:

- Identify competencies
 - Re-evaluate every 5 years
- Develop training guides and assessments
 - Recognized by Confederation for VET Diploma and Baccalaureate Degrees
- Assist in development of apprenticeships
- Support trainers within companies
- Build and support intercompany training centers and other industry specific schools

Swissmem

is responsible for the following VET programs:



Mechatronic Engineer (4y)



Electronic Engineer (4y)



Technical Design Engineer (4y)



Polymechanical Engineer (4y)



Apparatus Engineer (4y)



Commercial employee (3y)



Business ROI

- Savings on recruiting costs
 - Training to industry standards = savings on retraining = higher productivity
 - Loyalty to company. Typically 30% stay with training company (or return after college)
 - Sustainable learning model through paid internships
 - Aligned supply and demand of skilled workforce = number of apprenticeships dependent on market demand
 - <4% youth unemployment rate
 - Costs: depending on industry can be \$20,000- \$100,000 per apprentice for coaches, curriculum and material/equipment
 - Canton pays for classroom training (secondary and upper-secondary school)
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BASIC: Adapting the Swiss Model for Colorado

The Problem



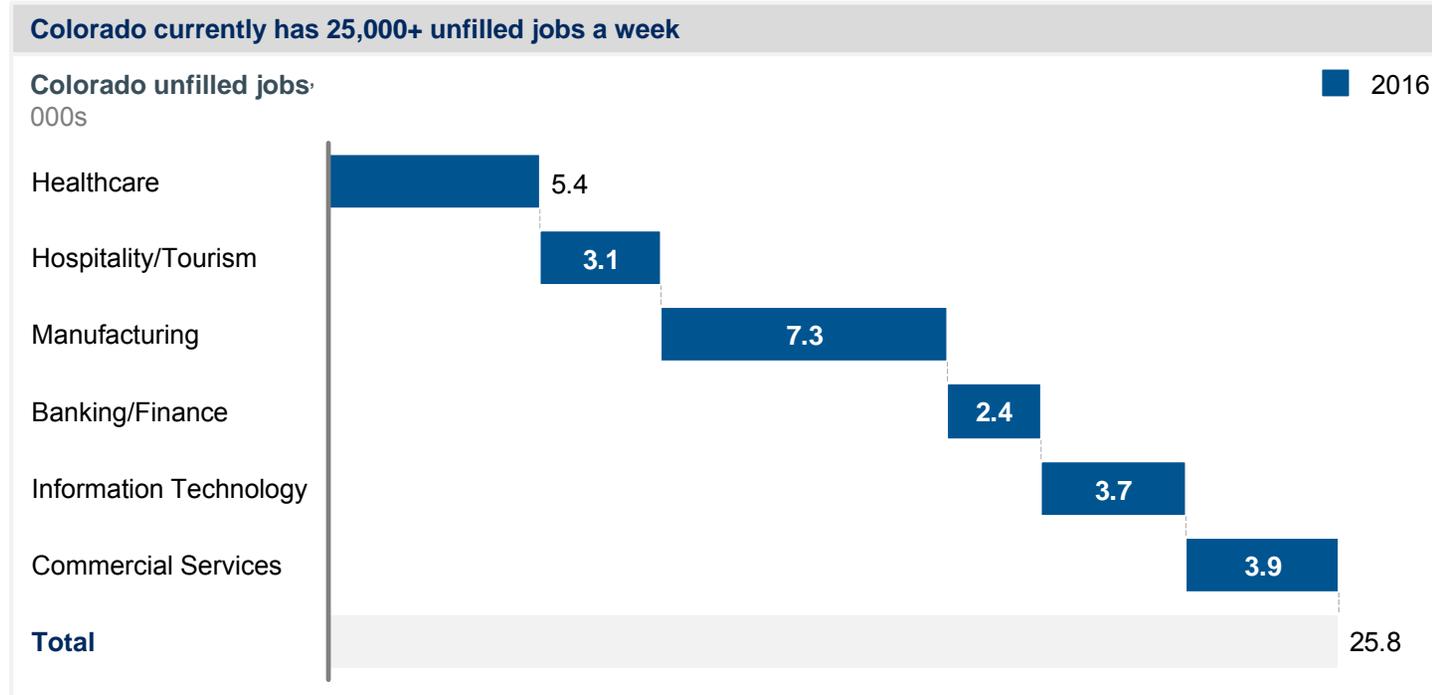
- Colorado's **businesses face an ongoing shortage of skilled workers, making it difficult to identify, hire, and train the talent they need**
 - Colorado faces ~25,000 unfilled weekly vacancies, resulting in ~\$300M annual GDP loss
- Colorado's **current education and training systems are not aligned to the competencies needed by business to close the growing talent gap**
 - The traditional secondary and post-secondary systems provide the academic “theory” for job readiness but not the real-world “practice” to develop job skills, business must step up to help with this.

The Solution



- To address this growing problem, Business and Schools in Collaboration (**BASIC**) **facilitates youth apprenticeships that match talent development to the evolving needs of businesses**
 - Businesses and industry associations develop apprenticeships for high demand roles
 - In 9th and 10th grade, students undertake a career exploration curriculum
 - In 11th and 12th grade, students pursue a paid, part-time apprenticeship
 - Students may complete a post-high school training year to receive a certified journeyman status, while obtaining higher education credits
 - After program completion, students may continue to work in industry, pursue additional technical training, or continue on to a 4-year degree program
- Apprenticeship programs like BASIC have **improved high school graduation rates by 20%+, lowered hiring and training costs for businesses, and increased expected lifetime earnings for participants by 30%+**
- By addressing the need for expanded apprenticeships starting in high school, we are also **expanding the infrastructure for apprenticeships for all Coloradans.**
- **BASIC needs substantial funding over the next 3 years** to stand up a core staff and establish the next 500 business partnerships across Colorado

Colorado's businesses struggle to fill key positions, raising the cost of finding and hiring critical talent

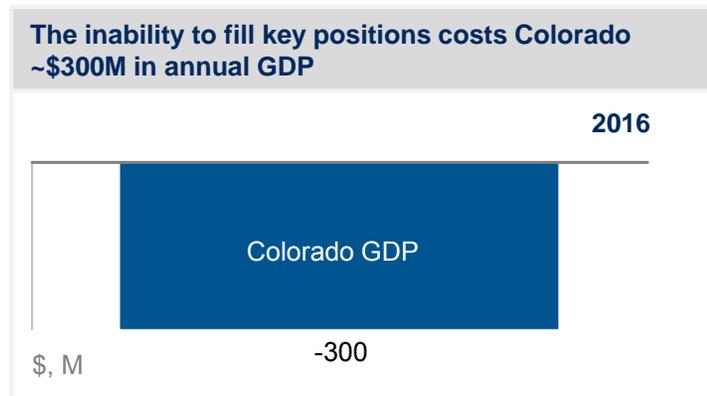


“Our tool room manager is 70 years old and we can't find talent to back fill him. Our newest hire came from Ohio.”

Noel Ginsburg, CEO Intertech Plastics

“Our current system of career and technical education and middle skills training will not sustain the needs of our business... We are in a crisis for finding and developing skilled talent,”

Jon Kinning, COO of RK Mechanical



Source: CO Dept. of Labor; Center for American Progress Jobs Training Report; Team Analysis

Colorado's traditional education systems leaves some students without a clear and integrated path to a career

100 9th graders begin high school



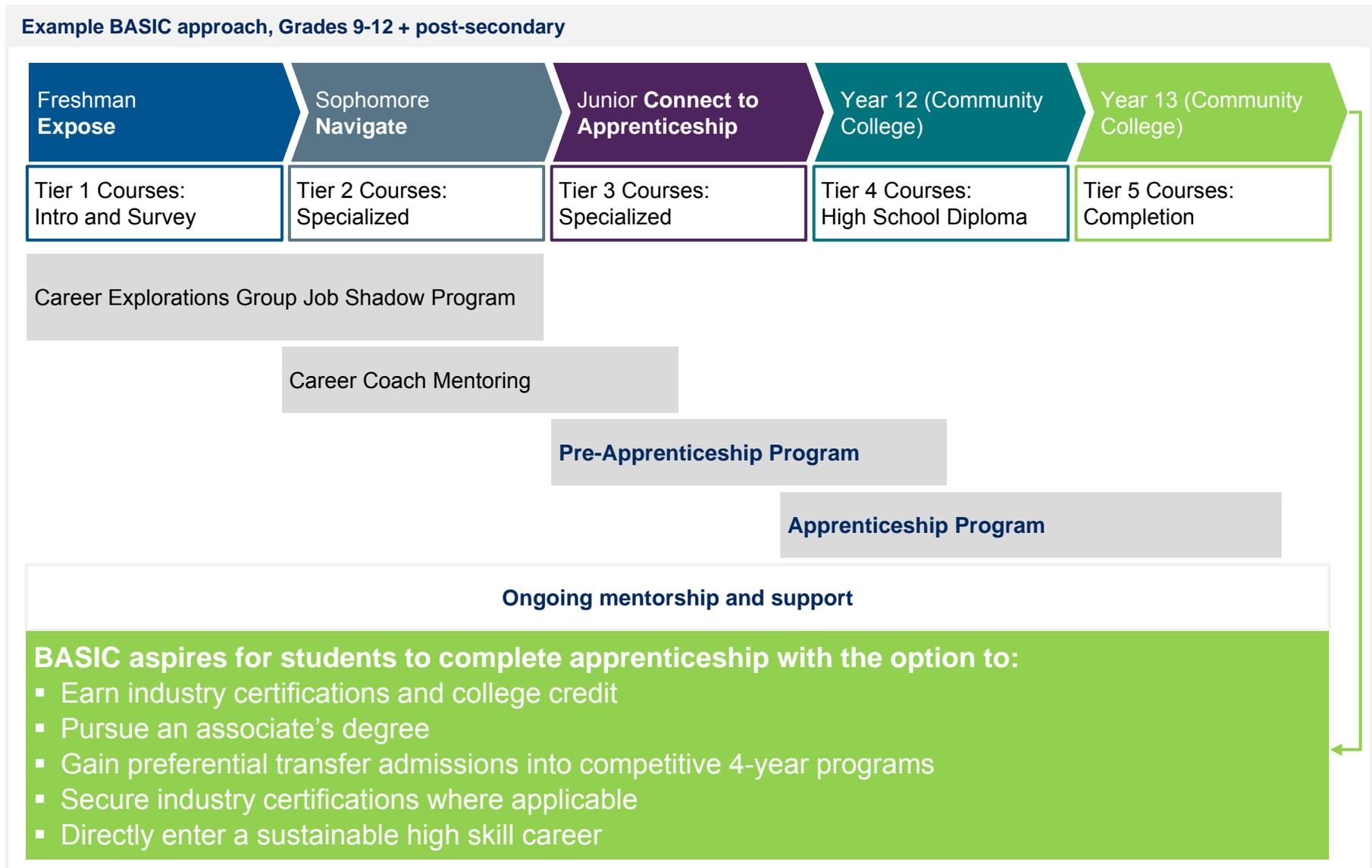
Works for only 18% - 23% of students

Colorado's traditional talent pipeline falls short of preparing the talent needed by business to be globally competitive

Slide 11

RG [6]1 this looks much better....
Ryan Gensler, 3/28/2016

An example of a BASIC Model for High Schools



BASIC gives Colorado businesses the tools they need to develop a highly skilled workforce

What BASIC does

- 1 Turns Colorado's companies into Centers of Learning, allowing students to convert theory into practice through career exploration and apprenticeships
- 2 Creates industry-specific talent pipelines by defining the competency standards and curriculum needed to prepare for high-demand jobs
- 3 Connects businesses and schools, linking talent development with an ever-changing labor market

Why BASIC works

Reduces all-in employee hiring and training cost by 20%+¹

Remains ROI neutral for participating businesses due to student productivity²

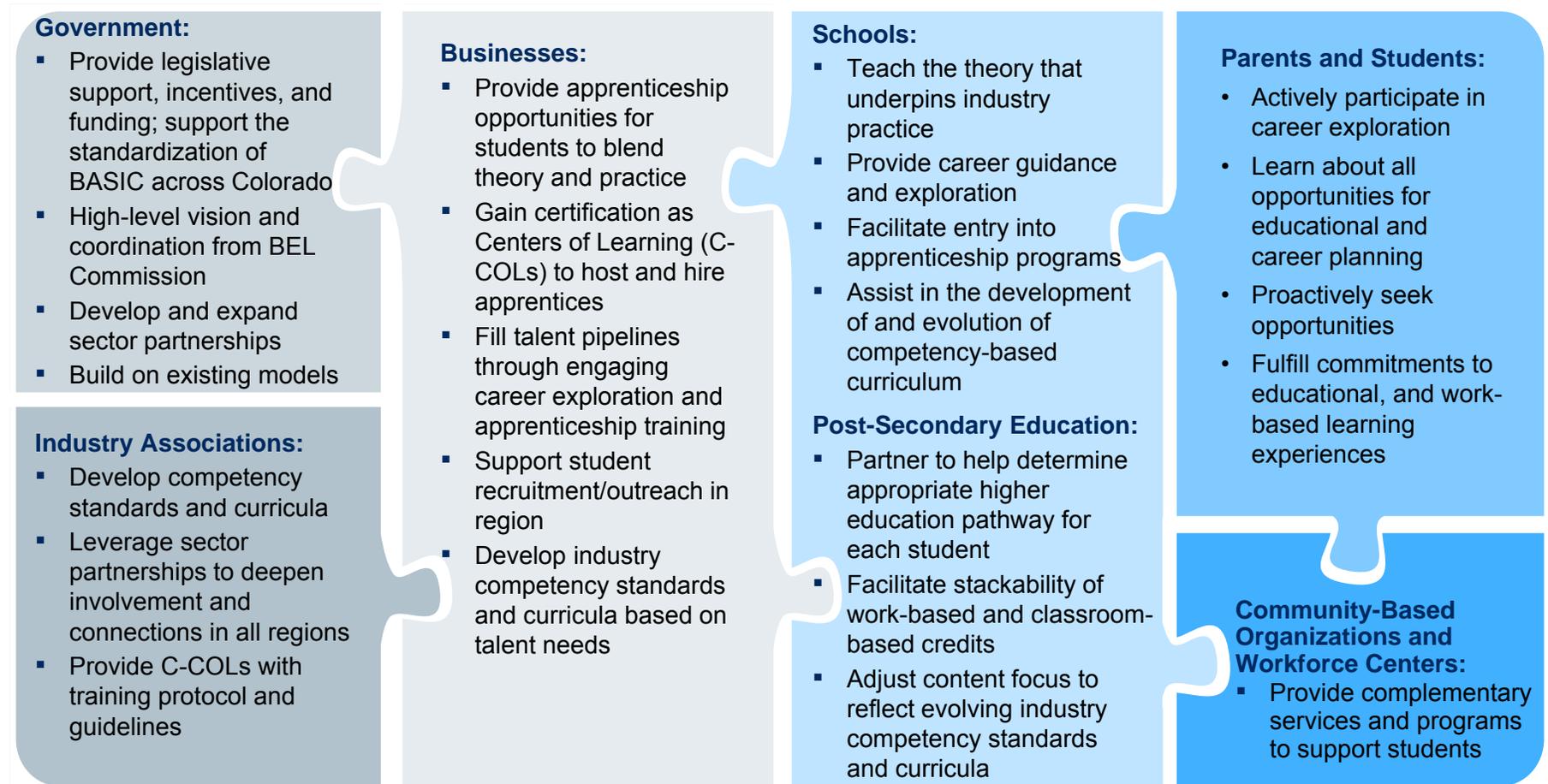
Delivers 23X lifetime return³ on taxpayer dollars invested in education and workforce training

Provides program graduates with a median annual wage of ~\$50,000^{4,5}

Increases participants' high school graduation rate from 77% to 93%^{6,7,8}

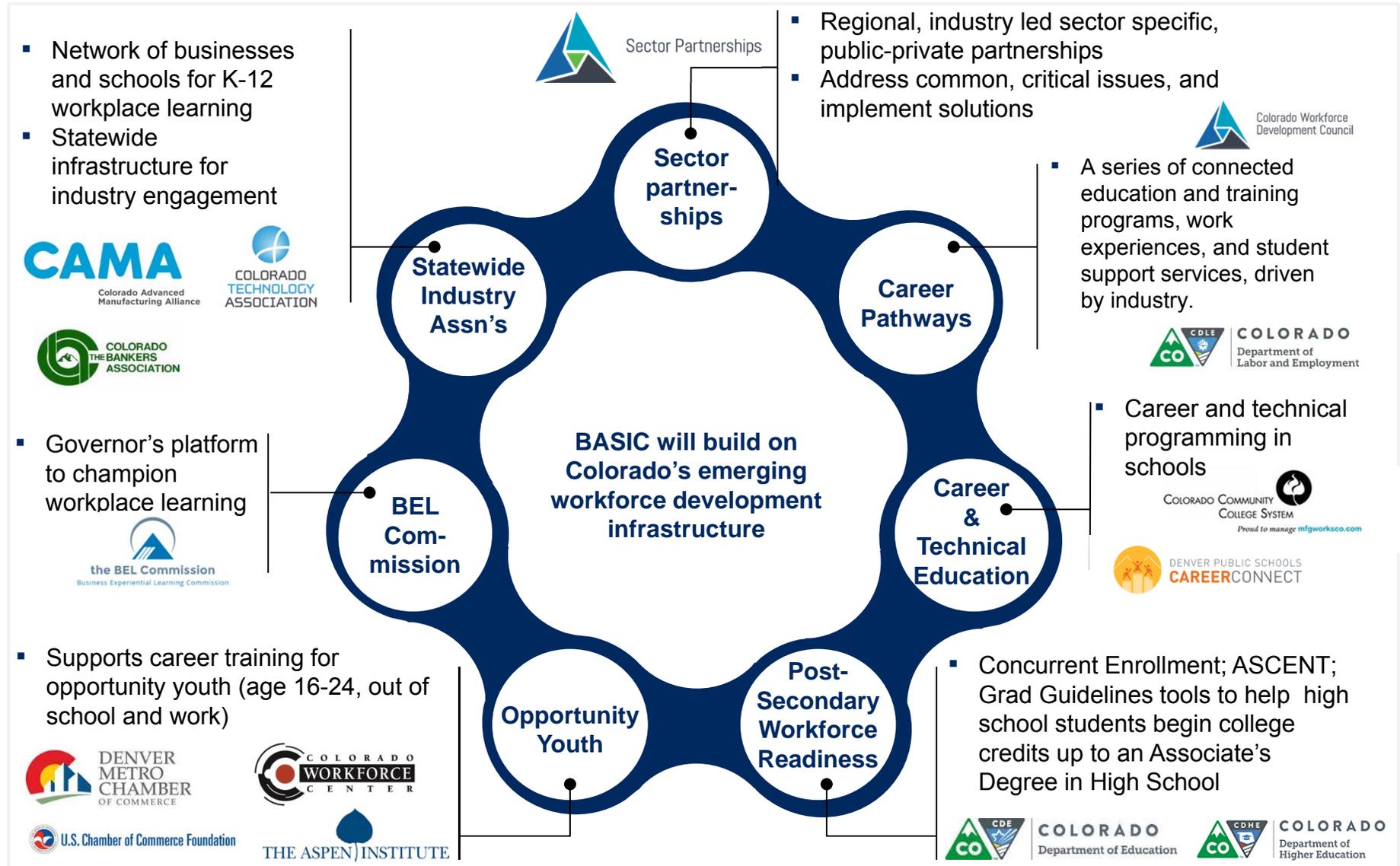
1 Boushey and Glynn "There are Significant Business Costs to Replacing Employees" 2012. 2 Canadian Apprenticeship Forum, "It Pays to Hire an Apprentice: Calculating the Return on Training Investment for Skilled Trades Employers in Canada" 2009. 3 Hollenbeck 2012 Washington workforce training results by program. 4 US Department of Labor Employment and Training Administration. 5 Washington State Workforce Training and Education Coordinating Board: Significant variation in median wages for apprentices exists; apprenticeship participants' median wage is \$28.61 while the lowest quartile earns \$17.85 and highest above \$38.40. 6 CO Dept of Education. 7 US Dept of Education. 8 Civic Enterprises et al., *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic: Annual Update*, 2015

BASIC matches talent development to talent need and puts business in the driver's seat



BASIC improves Colorado's talent pipeline by building an aligned, compatible system of skills-based certifications, credentials & degrees

BASIC is positioned to play a key role in Colorado's emerging workforce development ecosystem



Slide 15

RG [9]1 Do we need to add Skillful?
Ryan Gensler, 3/28/2016

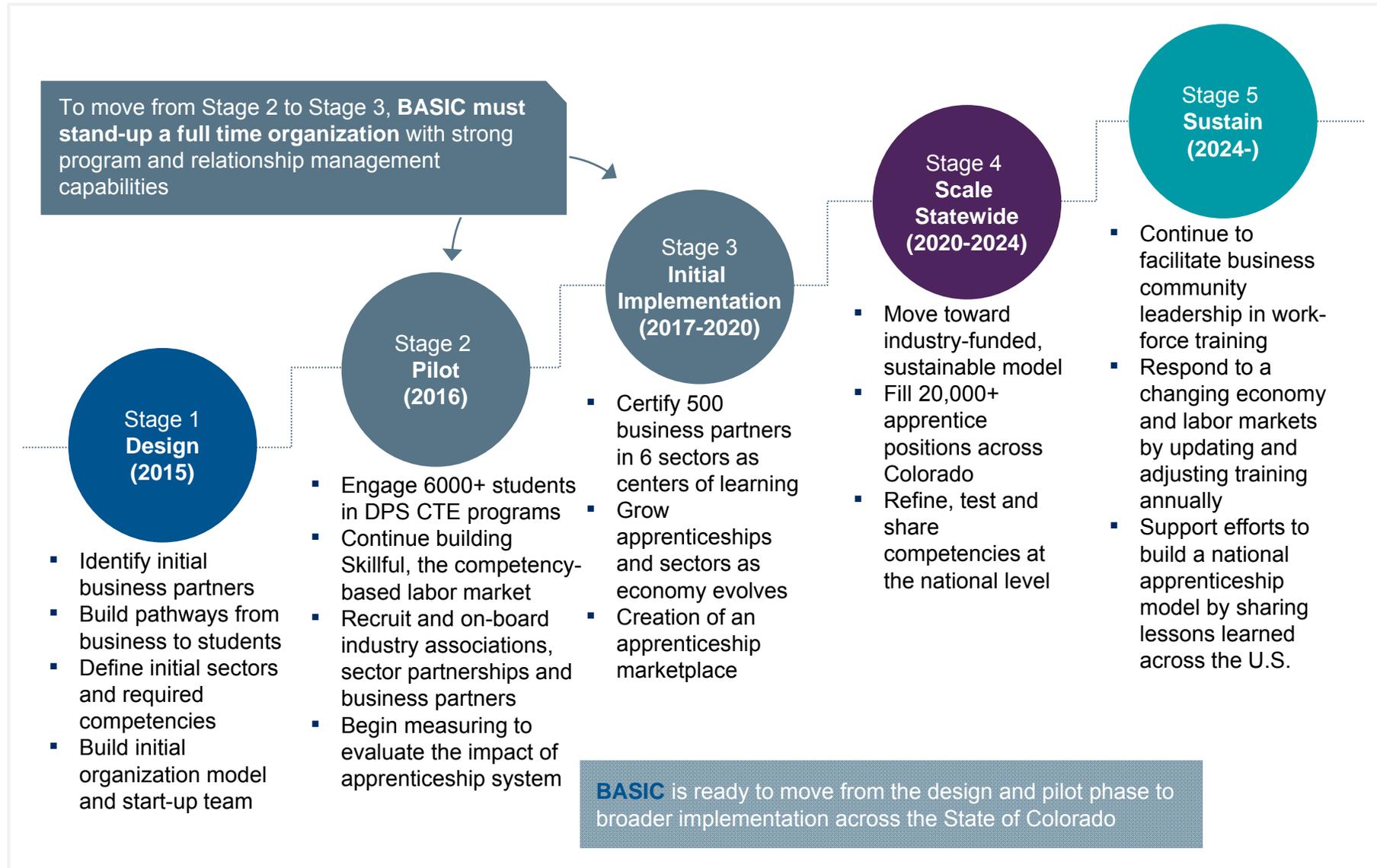
Leading businesses across the state have partnered with BASIC

BASIC sectors	Partners
<p>Business</p>	
<p>Industry Intermediaries</p>	
<p>Education</p>	
<p>Community</p>	
<p>Government</p>	

As a business-led initiative, designed to respond to an ever-changing economy and labor market, BASIC operates independently of Colorado's political and economic cycle

1 Partnership in progress

Over the next 10 years, BASIC will evolve from the pilot phase to national leadership in talent development

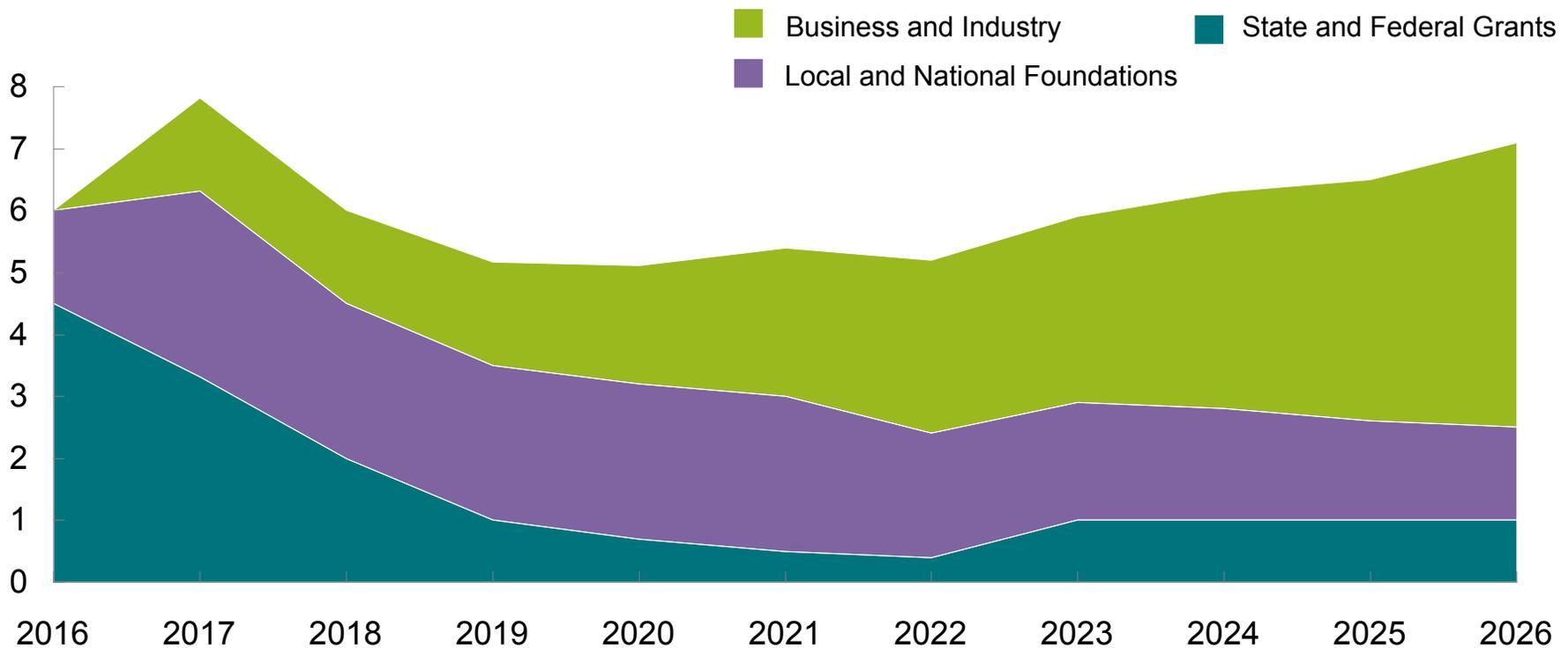


The business community will provide increasing financial support to BASIC as the program grows

Anticipated BASIC funding

BASIC planned funding flows

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As BASIC grows, state, federal and foundation funding will be replaced by support from the business community