Upgrading Technology Infrastructure in California's Schools

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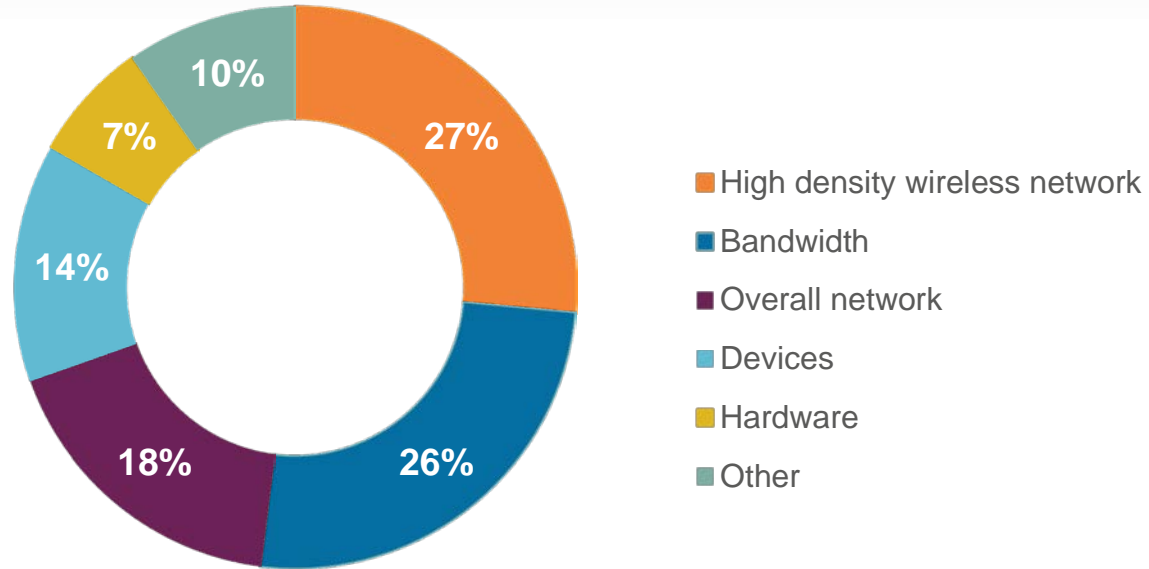
The shift to online learning is putting pressure on technology infrastructure in California schools

- A large number of schools need significant infrastructure upgrades or overhauls
- California schools need to make digital learning tools accessible to all students—at home and in the classroom

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90 percent of schools need network upgrades

Legend:
- High density wireless network (27%)
- Bandwidth (26%)
- Overall network (18%)
- Devices (14%)
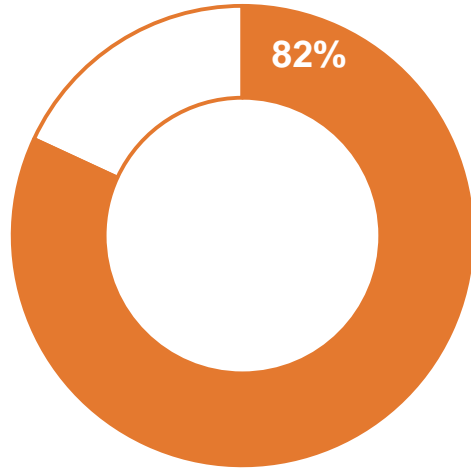- Hardware (7%)
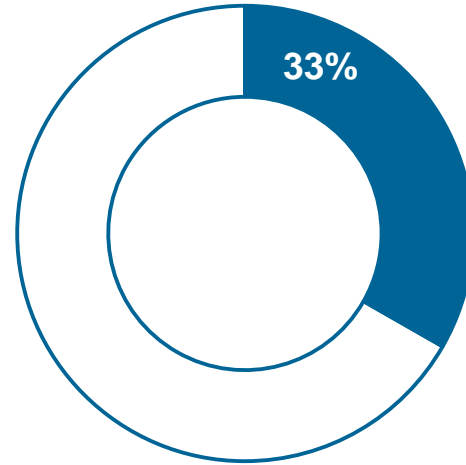- Other (10%)

Network needs vary across schools

- School and student characteristics are contributing factors
  - School size
  - Student demographics and educational needs
- Large schools are especially concerned about wireless networks and devices
- Rural and urban schools have similar concerns

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IT staffing continues to be a big challenge for schools

Rely on district IT staff for devices

82%

Have IT staff onsite to support local network configuration

33%

To estimate costs, we created two upgrade scenarios

- Baseline scenario (minimum levels for digital learning)
  - Bandwidth: 100 kbps per student
  - Devices: 2:1 student-to-device ratio
  - IT staffing: 1 staffer for every 300 devices
- Target scenario
  - Bandwidth: 1,000 kbps per student
  - Devices: 1:1 student-to-device ratio
  - IT staffing: 1 staffer for every 300 devices

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Upgrades require multi-year investments

	Baseline ($ millions)			Target ($ millions)		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Connectivity	19	1	1	209	32	32
Devices	117	184	184	587	303	303
IT staffing	316	323	328	772	791	807
Three-year total	1493			3835		

Policy recommendations

- Continue and expand funding for school network upgrades
- Plan to make long-term tech infrastructure investments
- Provide targeted technical assistance and professional training to school technicians
- Bridge gaps in technology access among students in high-minority and high-poverty schools
  - Public libraries can provide devices and Internet to economically disadvantaged students
  - Innovative public-private programs

Notes on the use of these slides

These slides were created to accompany a presentation.
They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.

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