Current Aviation Weather and ATM-Weather Integration Technology Transition and Translation

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Federal Aviation Administration

Outline

- The problem
- Managing Technology Transition and Translation
- Elements of Technology Transition and Translation
- Key Management Practices for Transition and Translation
- FAA Transition and Translation
- The problem
- Mitigation



What's the problem?









Managing Technology Transition and Translation

- Address a real customer requirement
 - Technology transition should not be undertaken until there is a clear customer requirement for it
- Meet that requirement
 - Technology transition resulting in a system that does not perform the function for which it was acquired is a failure and a waste of resources
- Have adequate resources
 - The transition process should be fully funded and staffed or it should not be undertaken
- Secure customer buy-in
 - Change often breeds resistance \rightarrow it is important that users welcome the transition of new technology and are part of the process from the start



Elements of Technology Transition and Translation

- Evaluation
 - Determine capabilities/limitations of new tech & support requirements/costs
- Development of a concept of operations
 - Ensure the technology is applied most effectively
- Tailoring
 - Configure the technology for specific customer and application
- Installation at operational site
- Acceptance Testing
 - Assures installation was done correctly & completely
- Training
 - Requires user training in their operation, maintenance and application



Key Management Practices for Transition

- Customer-driven tasking
 - National Airspace System stakeholders using meteorological capabilities
- Managed and funded independent of operational units
 - Office of NextGen (ANG) funds research
- High skill level with flexible skills mix
 - Pilots, dispatchers, meteorologists, engineers, human factors
- Customer involvement throughout process
 - Build a little, test a little
- Co-location with operational facility
- Attention to customer relations



Key Management Practices for Translation

- Customer-driven tasking
 - Air Traffic Organization (ATO) using decision support tools
 - Air Traffic Services (AJT) \rightarrow Mission Support (AJV)
- Managed and funded independent of operational units
 - Office of NextGen (ANG) funds research
- High skill level with flexible skills mix
 - Controllers, meteorologists, engineers, human factors
- Customer involvement throughout process
 - Build a little, test a little
- Co-location with operational facility
- Attention to customer relations



Technology Transition Examples







FAA Technology Transition: Research \rightarrow **NWS**





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FAA Technology Translation: Research \rightarrow **ATO**

TAF KLGA 171140Z 1712/1818

36007KT 2SM -RASN BR VV008 FM171300 34009KT 1SM -SN BR OVC008

TEMPO 1713/1715 3/4SM -SN BR FM171600 31012KT 3SM -SN BKN015 BKN025 BI FM171800 31014G20KT P6SM SCT025 BKN120 FM180600 31012KT P6SM SKC FM181400 29009KT P6SM SKC

N/	-		Sustained		Gust		Tailwind
			Crosswinds		Crosswinds		
	Hour Dir Spd G		0.000111100				
	17/12Z 360 7 -	•	21% 79%		21% 79%	•	79% 17%
	17/13Z 340 9 -	•	98%		93%	•	76% 17%
	17/14Z 340 9 -	٠	100%	•	98%	•	77%
	17/15Z 340 9 -	•	100%		100%	•	89%
States and	17/16Z 310 12 -	٠	100%		96%		57% 32%
	17/17Z 310 12 -	٠	89%		86%	•	63% 27%
	17/18Z 310 14 20	•	89%	•	63% 19%	•	24% 28% 17%
	17/19Z 310 14 20	٠	93%		82%	•	25% 32% 23%
	17/20Z 310 14 20	٠	83% 17%	•	60% 21%	•	23% 27% 19%
	17/21Z 310 14 20	•	96%		94%		40% 35% 25%
	17/22Z 310 14 20	٠	94%		81%	•	31% 42% 19%
	17/23Z 310 14 20	٠	94%		92%	•	42% 39% 19%
	18/00Z 310 14 20	٠	82% 17%		62% 19%	•	61% 30%
	18/01Z 310 14 20	•	76% 22%		56% 21%		62% 30%
	18/02Z 310 14 20	•	80% 19%		66% 17%	•	59% 37%
	18/03Z 310 14 20	•	85%		68% 18%	•	64% 24%
	18/04Z 310 14 20	٠	80% 20%		56% 21% 17%	•	68% 27%
	18/05Z 310 14 20	•	81% 19%		68%	•	49% 42%
	18/06Z 310 12 -	•	97%		83%		50% 24% 17%
	18/07Z 310 12 -	•	95%		85%	•	43% 31% 20%
	18/08Z 310 12 -	•	97%		82%	•	36% 27% 26%
	18/09Z 310 12 -	•	89%		78%	•	48% 30%
	18/10Z 310 12 -	•	90%		80%	•	36% 34% 29%
	18/11Z 310 12 -	•	92%		78%	•	34% 42% 24%
	18/12Z 310 12 -	•	97%		88%	•	52% 35%
	18/13Z 310 12 -	•	92%		88%	•	45% 27% 28%
	18/14Z 290 9 -		88%		54% 33%		42% 46%
	18/15Z 290 9 -	•	88%		79% 21%		33% 42% 25%
	18/16Z 290 9 -	•	75% 25%		42% 50%		50% 50%
>	18/17Z 290 9 -	•	75% 25%		58% 42%	•	50% 33% 17%
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What's the problem?





Mitigation





Summary

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