



Develop America's Airmen Today ... for Tomorrow

On Learning: The Future of Air Force Education and Training

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Air Education and Training Command

3 Dec 08



Vision



Develop America's Airmen Today ... for Tomorrow

“Technological change is accelerating. To accomplish the Air Force mission in an environment of accelerating change, we will need to recruit, train, and educate Airmen with agile minds and cutting edge skills.”



STEPHEN R. LORENZ
General, USAF
Commander, Air Education and Training Command

“Delivering unrivaled Air, Space and Cyberspace Education and Training”

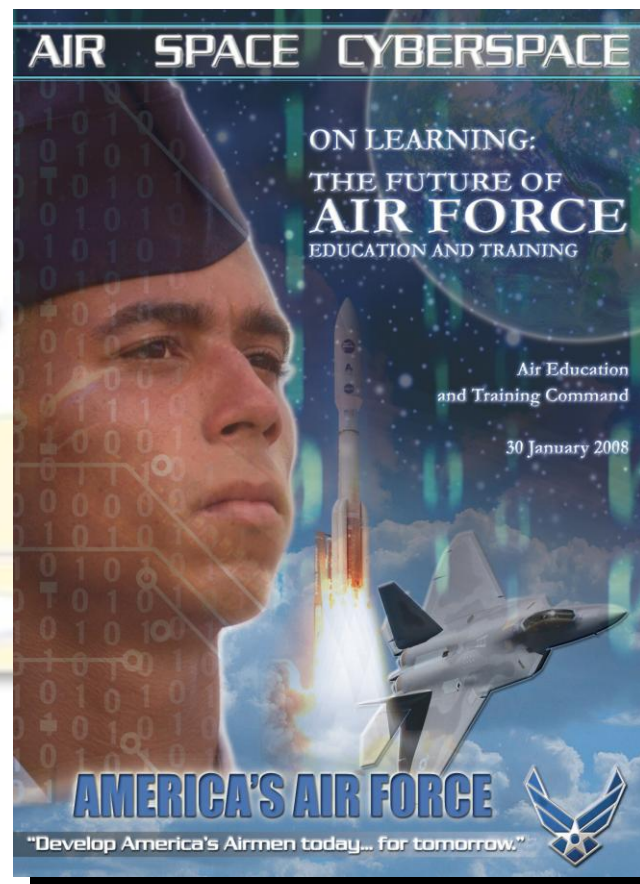


Overview



Develop America's Airmen Today ... for Tomorrow

- Imperatives
- Future Environment
- Learning Concepts
- MyBase
- Recommendations
- Challenges
- Way Ahead
- Program Status



"White Paper"

Knowledge is power!



Imperatives



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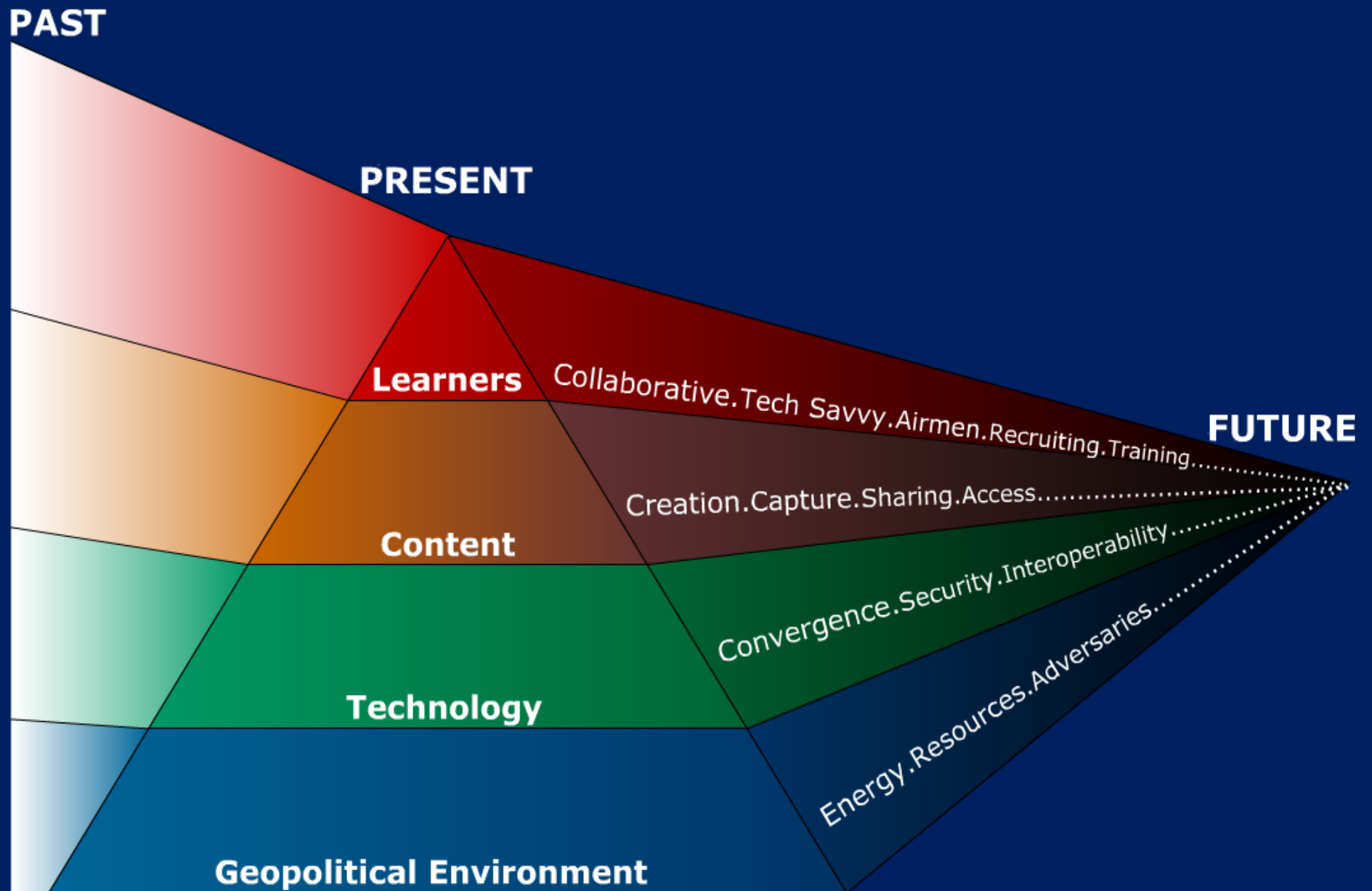
The AF needs:

1. A **common vision** for the future of E&T
2. A **strategic implementation plan** to achieve the vision
3. A **systematic approach** for inserting and integrating technology into E&T
4. An **enterprise-wide architecture** for E&T
5. An **investment strategy** for resourcing E&T transformation
6. Closer **integration** of training and operations
7. A **commitment to start now**

The future is now!



Future Environment





The Future USAF Worker



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Today's Cyber Teenager – Tomorrow's Knowledge Worker





Today's Airman



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Technology



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Video



Smart Phone



Wireless



Virtual Reality



AI



Search



Geolocation



Broadband



Computing



GPS



Collaboration



Storage



Visualization



Gaming



3-D

Technology will “not” be the limiting factor



Future Environment



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A large, stylized graphic of a torch with a red flame, a yellow handle, and a white star at the base, serving as a background for the text.

Did You Know?

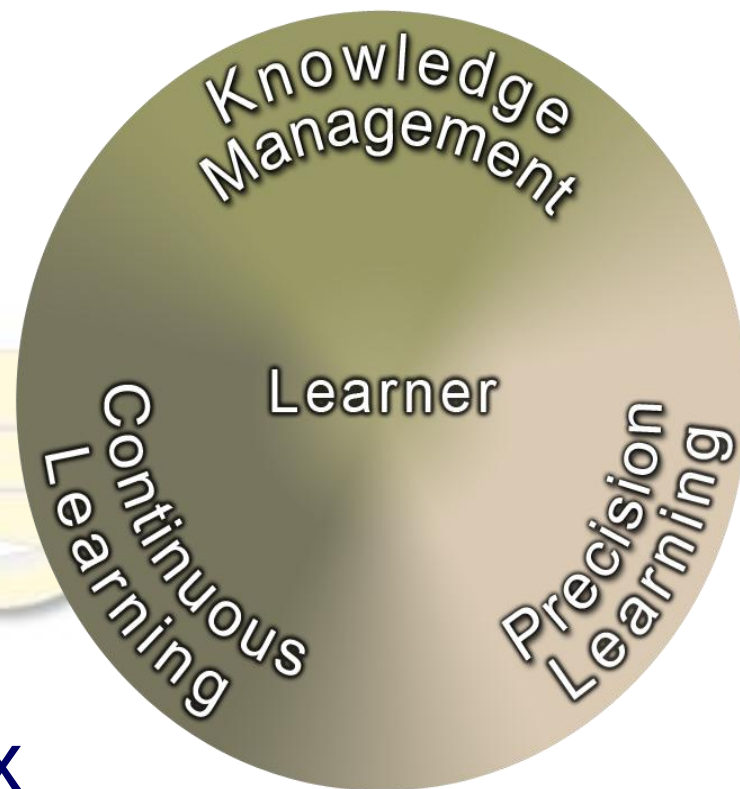


Learning Concepts



Develop America's Airmen Today ... for Tomorrow

- **Knowledge Management**
- **Continuous Learning**
- **Precision Learning**
- Learner-centric
- Knowledge base
- Knowledge on demand
- Cognitive/affective domains
- Live, virtual, constructive mix
- Knowledge-enabled Airmen



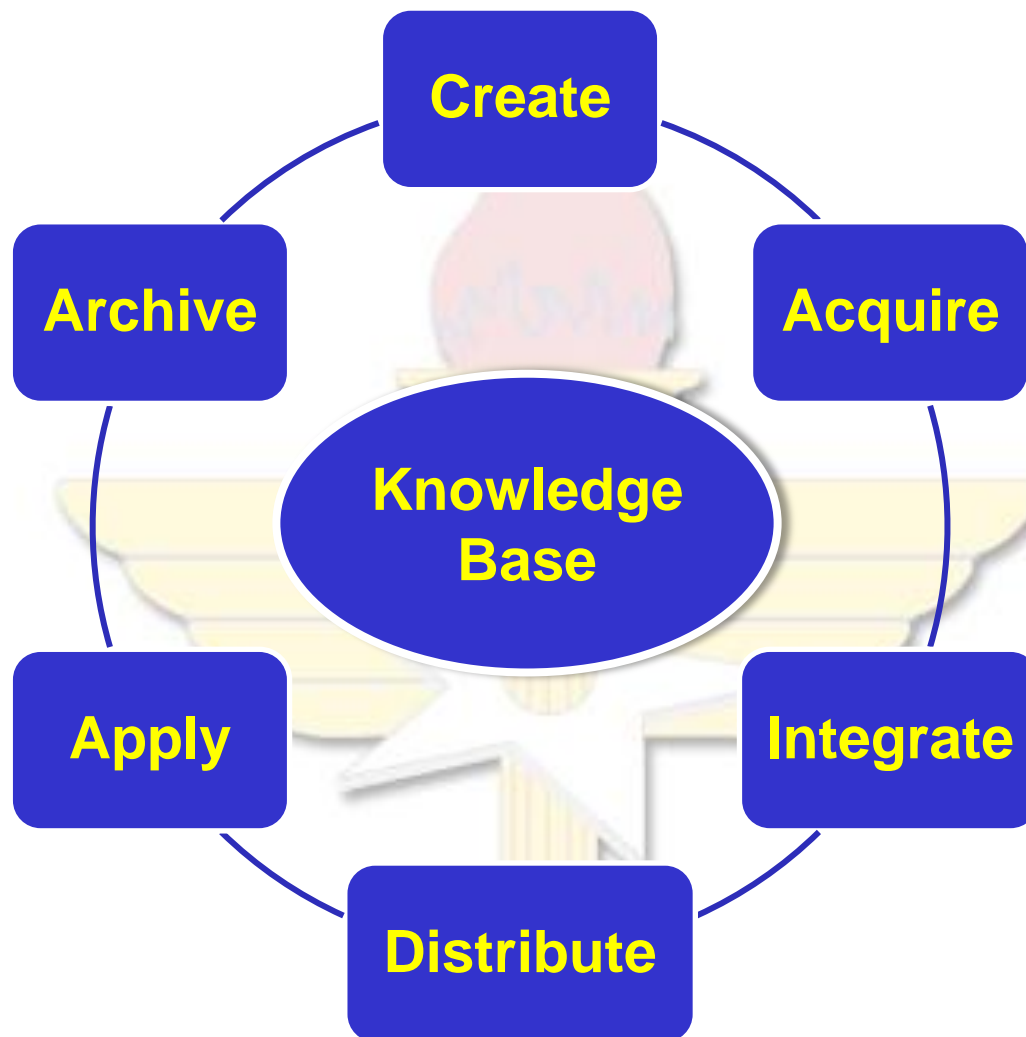
Air Force 2.0: The New Learning Organization



Knowledge Management



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“We must develop and field systems that are not just network-centric, but knowledge-centric.”



Knowledge Management



Develop America's Airmen Today ... for Tomorrow

- Learning culture
- Learning organization
- Leverage **learning networks**, expert systems and communities of practice
- Enterprise-wide **knowledge base** with authoritative data
- Knowledge-enabled Airmen
- Create, acquire, integrate, distribute, apply and archive knowledge



“Man’s flight through life is sustained by the power of his knowledge.”



Open Courseware



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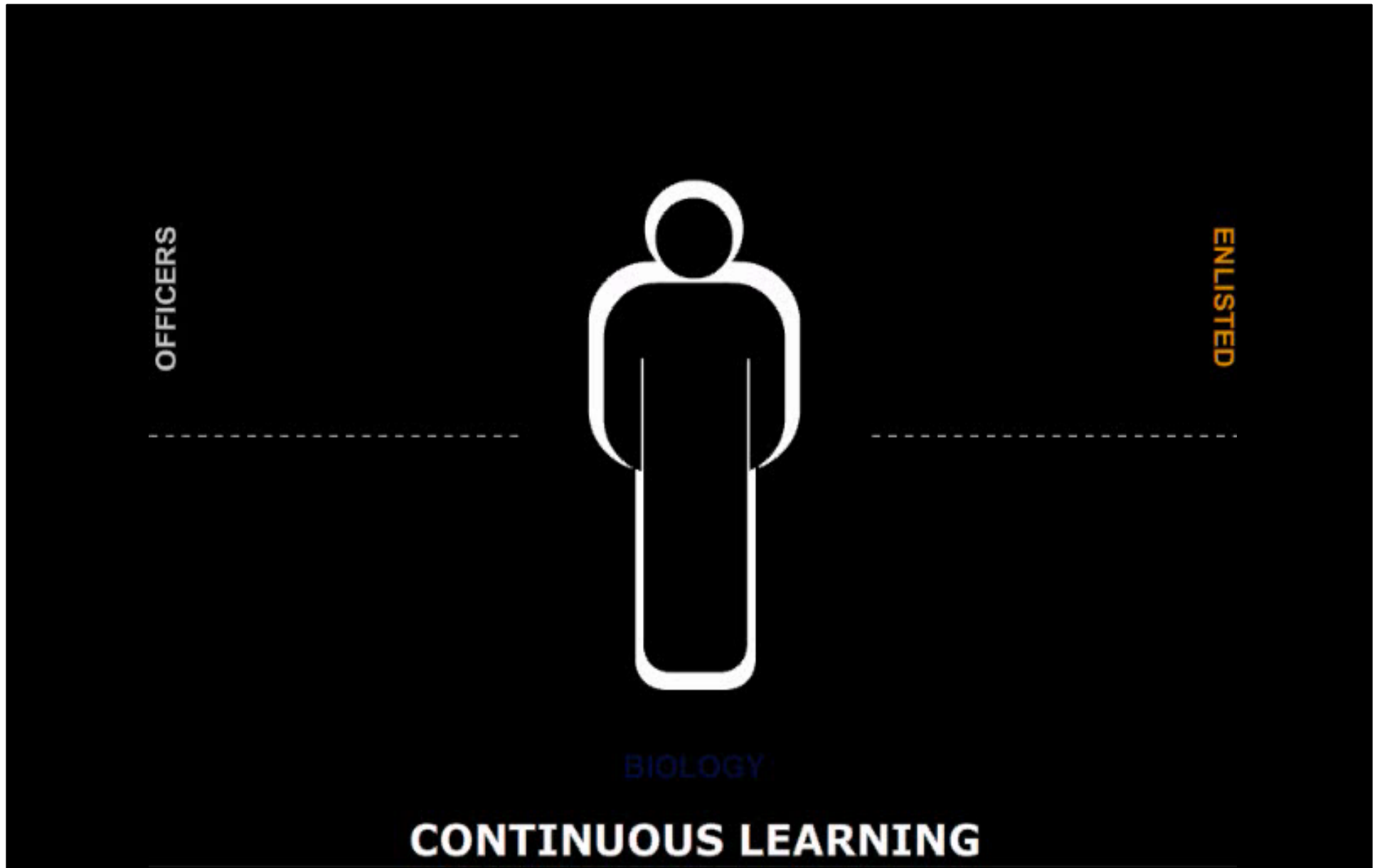
The screenshot shows the MIT OpenCourseWare website. At the top, there is a navigation bar with links for Home, Courses (highlighted), Donate, About OCW, Help, and Contact Us. A search bar is also present. The main content area features a 'Courses' section with a 'DONATE NOW' button. Below this, there is a 'Courses by Department' section listing various departments such as Aeronautics and Astronautics, History, and more. A sidebar on the left provides additional navigation options like 'Get Started with OCW', 'Find Courses', and 'Other Resources'. The bottom of the page features a blue banner with the text 'The First Command'.



Continuous Learning



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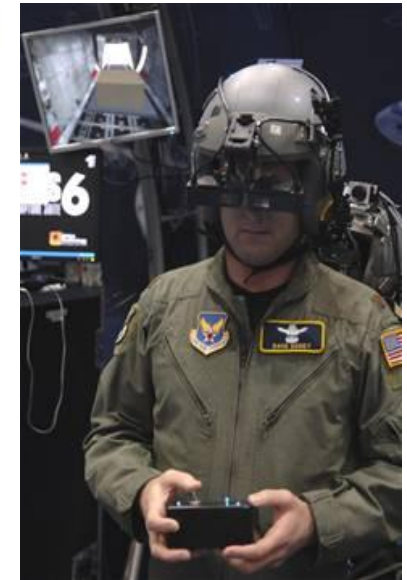


Continuous Learning



Develop America's Airmen Today ... for Tomorrow

- Recruit those **best able to learn** and operate in the future AF
- Learning **every day** – learning for life
- Learning driven by AF requirements (push) and **learner needs/desires** (pull)
- Relies on **training, education and experiential** learning
- Complements “**Continuum of Learning**” for force development
- Closer **integration of education, training and operations**
- Builds **intellectual capital** for the AF



Knowledge-Enabled Airmen are the key to flexibility

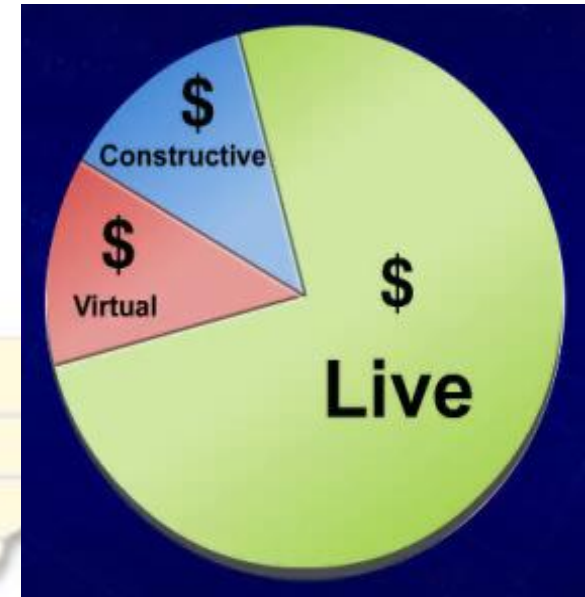


Precision Learning



Develop America's Airmen Today ... for Tomorrow

- **Right mix** of live, virtual and constructive means
- **Right knowledge and skills**
- **Customized** learning based on learner needs and aptitudes
- Learning **delivered** when, where and how required
- **Tailored** to achieve desired learning outcomes



“Take advantage of every opportunity to increase your knowledge.”



Precision Learning



Develop America's Airmen Today ... for Tomorrow

- **Right use of technology** and media for education & training
- **Collaboration** and professional networks
- **Mission essential competencies**
- **Expert systems** and mentoring
- **Current, authoritative data**
- Rapid incorporation of **lessons learned**



Learner-centric focused education and training

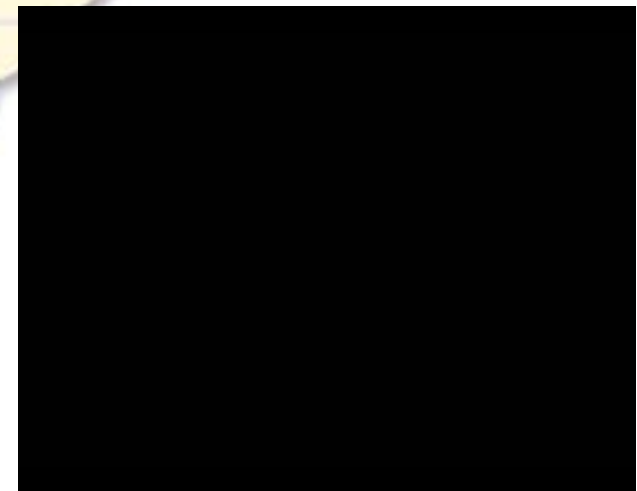


LVC Training



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- 4 F-16s – live flying at Luke
- 2 F-16s – simulators flown at Mesa
- 2 F-16s – computer generated at Mesa
- 4v4 flown on Barry Goldwater Range
- Connected through Link 16
- Full debrief/after action review capability
- Fight's on!



Right mix of live, virtual and constructive training

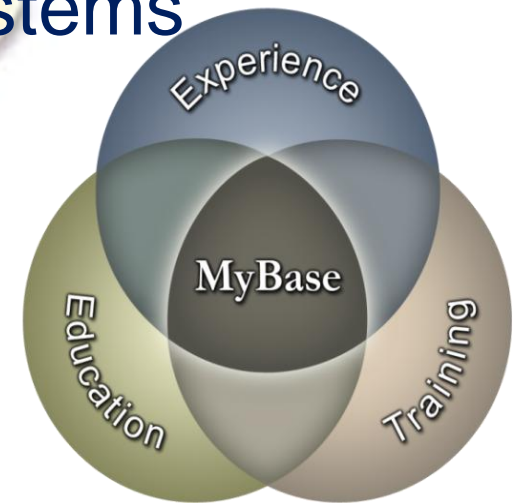


MyBase



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- Virtual, exploratory and **interactive environment**
- Supports **mix of live, virtual and constructive** education and training
- **Learner interface** providing access to AF knowledge bases and management systems
- Supports **continuous**, life-long learning
- **Integrates** existing systems
- Enables **precision learning**
- Platform for **collaboration**



“Welcome to MyBase!”



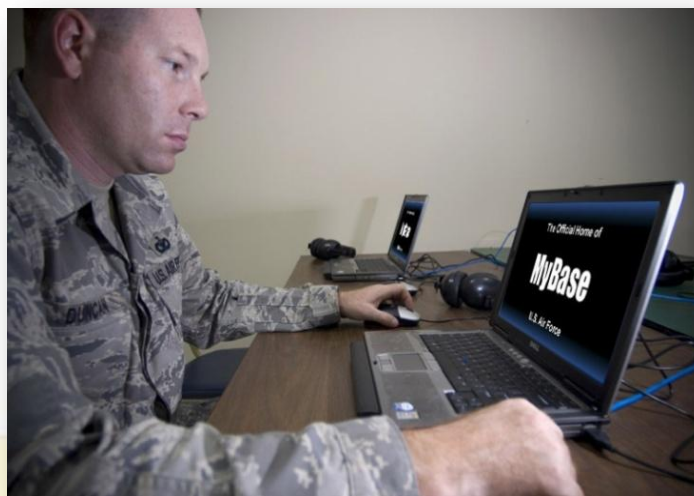
MyBase



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Recruiting/Public



Education & Training



Operations

Enterprise-wide learning environment

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Vignettes



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- Vignette 1: MyBase Public
 - Recruiting
 - Public Awareness
- Vignette 2: MyBase Training
 - Squadron Officer School
 - Technical Training
- Vignette 3: MyBase Operational
 - Rehearsals
 - Operations



“Warriors enlist here!”



Recommendations



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- Strategic Implementation Plan
- Strategic Communication
- Functional Area Analysis
- Chief Learning Officer
- Knowledge Base
- Knowledge Management
- Knowledge Transparency
- Key Technologies
- Systematic Application of Technology
- Resource Learning Technologies
- MyBase Virtual AFB
- Cyberspace Pilot Project
- Develop af.edu
- Concept Studies
- Learning Experiments
- Force Development
- Requirements and Acquisition Process
- Change Management
- Right-size Capacity
- Evaluation and Assessment



Challenges



Develop America's Airmen Today ... for Tomorrow

- *Transforming* the learning environment for the learners of tomorrow
 - Defining the new knowledge *concepts* for learning
 - Defining the new *technologies* required
 - Defining how to *organize* for effective learning
- Increasing *effectiveness*
- Increasing *efficiency*

Greatness depends on courage in the face of challenges



Challenges



Develop America's Airmen Today ... for Tomorrow

- Meeting *generational needs* by transforming the learning experience
- Focusing *learning investments* – budget, manpower and POM
- Systematically *inserting technology*
- Ensuring *security* of content distribution
- *Changing the culture*
- *Managing change*

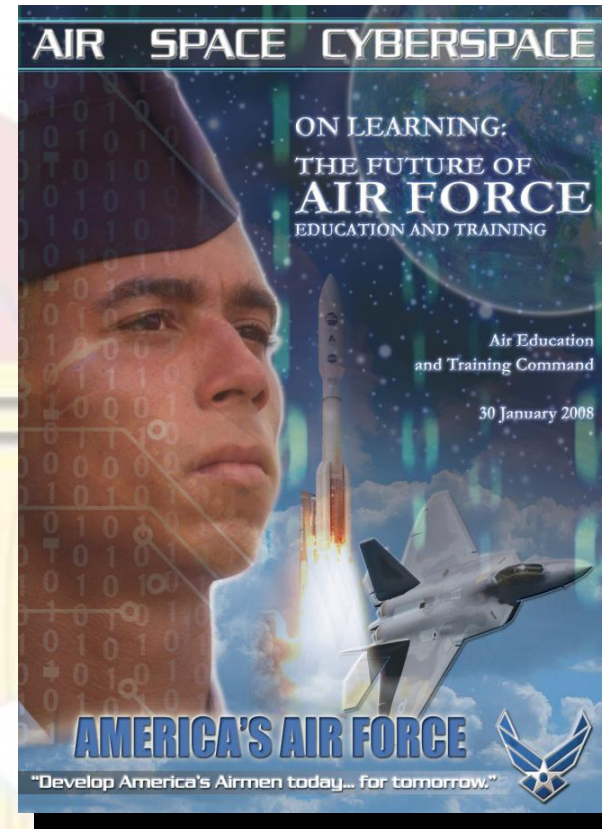
The Air Force must become an agile, knowledge-enabled organization in order to maintain global vigilance, global reach and global power.



“Excellence in Learning”



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<http://www.aetc.af.mil/library/whitepaper.asp>

“Delivering unrivaled Air, Space and Cyberspace Education and Training”



Way Ahead



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- Focus Areas
 - Instructional Design
 - Knowledge Systems
 - Virtual Environments
 - Mobile Learning
 - Simulations and Gaming
- Initiatives
 - Support Efforts
 - Study Efforts
 - Projects and Programs
- Advanced Learning Technology Demonstrations (ALTD)



“The best thing about the future is that it comes only one day at a time.” Abraham Lincoln

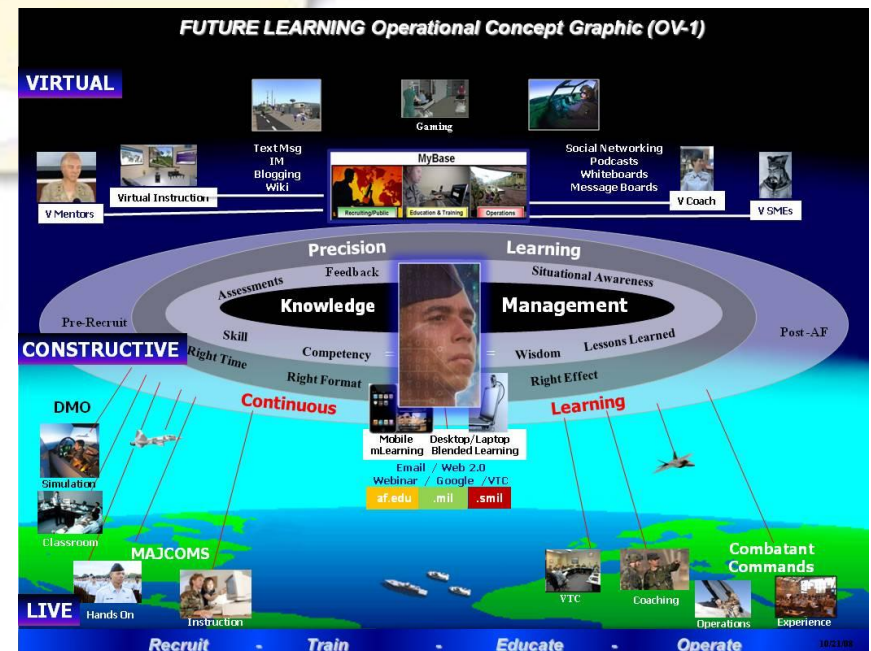


Support Efforts



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- Strategic Communication
 - 70+ Briefings
 - Engage Industry, Academia, Services and MAJCOMs
 - Partnering with AFRL, HQ AFMC, DAU, AFA and others
 - **AETC Symposium**
- Governance
 - AETC Council, Board and Working Groups
- Organize
 - **Strategic Implementation Plan**
 - Innovation Process
 - Future Learning Division
- Resource
 - Funding
 - Manpower





2009 AETC Symposium



Develop America's Airmen Today ... for Tomorrow

Henry B. Gonzalez Convention Center
San Antonio, TX

15 – 16 January 2009

Over 70 Seminars in 6 sessions
More than 70 Booths and Demonstrations
AETC/AFA Ball - 1,500 attendees

Guest Speakers:

- General William M. Fraser III
 - Air Force Vice Chief of Staff
- General C. Robert Kehler
 - Commander, Air Force Space Command
- Major General William T. Lord
 - Commander, Air Force Cyber Command (P)



www.aetcsymposium.com

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Implementation Plan



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- Near-term (FY09)
 - Strategic Communication
 - Planning
 - Governance
 - Resourcing
 - Organization and Processes
 - Integration
 - Show early successes
- Mid-term (FY10-11)
 - Institutionalize Future Learning within AETC
- Long-term (FY12-15)
 - Institutionalize Future Learning across the Air Force



Maturity Model (Notional)



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L&D Attribute of Greatness

Mission Alignment of L&D

Operate

Competency Management

Content - Information Management and Access

Governance & Management

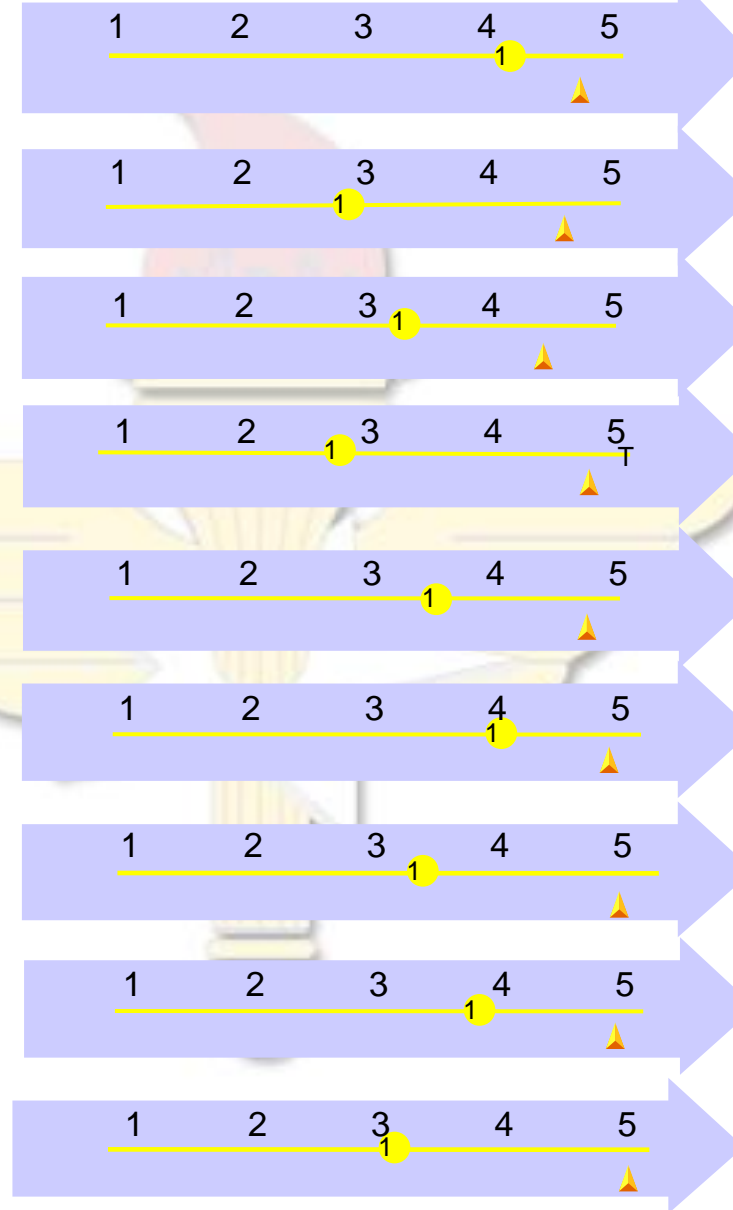
Behavior & Culture – Human Capital Optimization

Technologies

Delivery

Performance Measurement and Reporting

Maturity Assessment



Next Task:

Identify target levels for each attribute

- AETC 2009 Baseline
- AETC 2015 Target
- ▲ Best of the Best

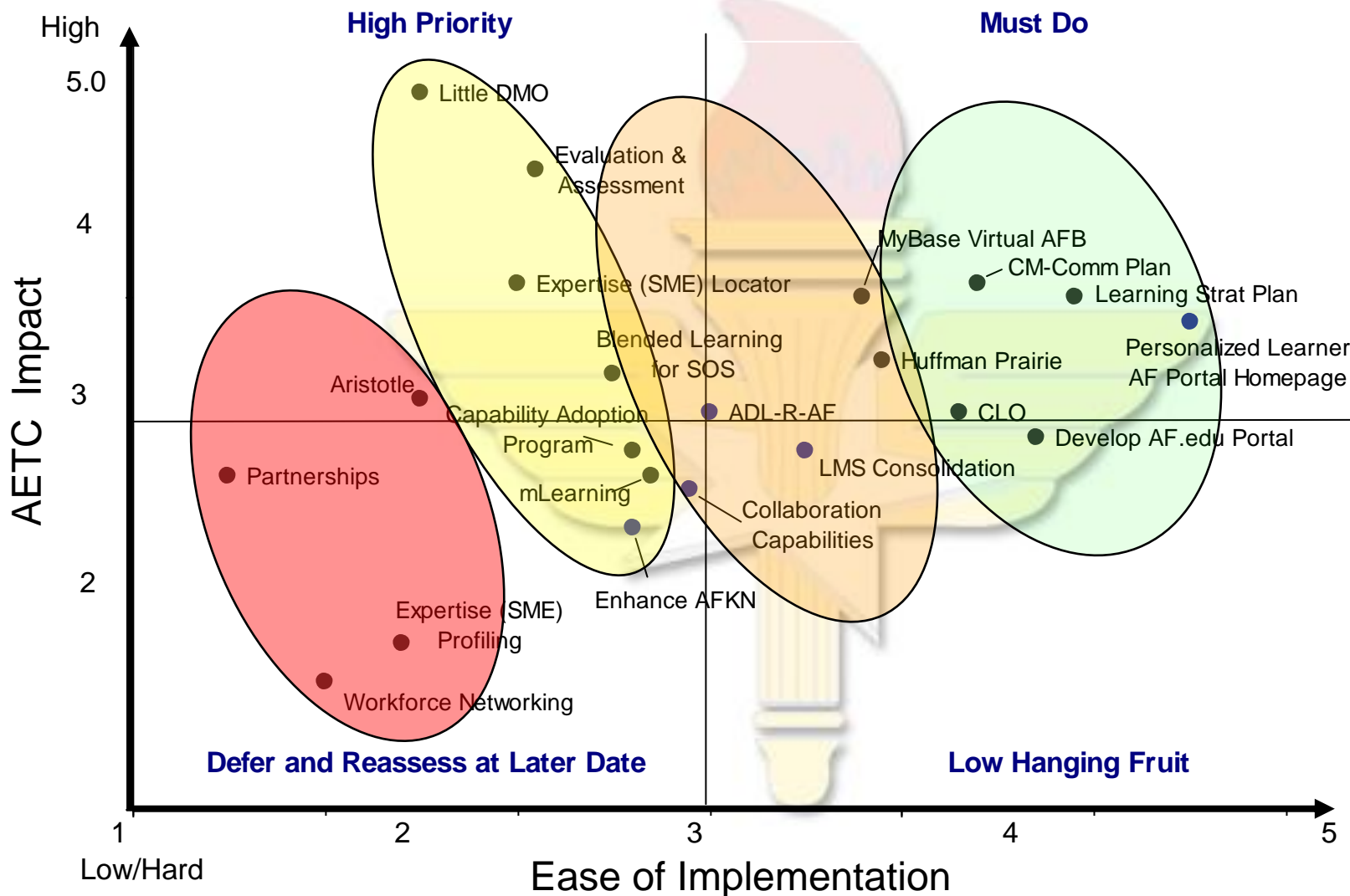


Evaluating Learning Initiatives



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(Notional)



QW	Initiate now through 2010
Mid	Initiate 2011 through 2012
Long	Initiate 2013 through 2015
Potential	Initiate beyond 2015



Study Efforts



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- Completed:
 - **Airmen and Technology (AETC/SAS)**
- In-Progress:
 - **Blended Learning (University of Texas)**
- Planned:
 - Customized Learning
 - Measuring Learning Success
 - Follow-on Airmen and Technology Studies
 - Virtual Training Technologies (AF Science Board)



Airmen & Technology Study



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Summary Views:

97% said it was important to integrate **new technologies** to enhance training and performance

95% said it was important to develop **innovative approaches** for education and training

Technology:

51% of the young subgroup participated in internet gaming

52% said high-speed internet service was available to them

90% indicated a PC/laptop should be used in training in some way

94% reported using blogs



Training:

27% agreed their current technical training course should be held online

45% felt virtual environments would enhance operational training and personnel issues

65% felt online gaming provides encouragement to join the military

70% would be willing to complete some BMT courses over the internet prior to in residence

Virtual Environments and Avatars:

93% felt a view of bases online would be beneficial

60% felt large-scale virtual operational exercises online would enhance readiness

58% felt avatars could be effective mentors

54% of those familiar with avatars felt their use would enable more effective learning

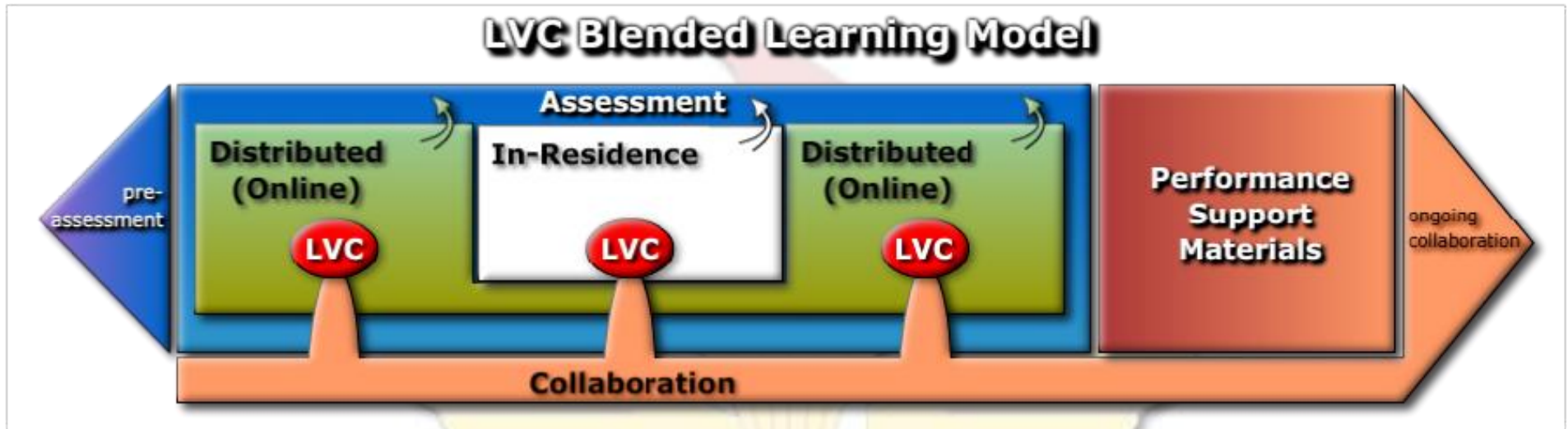
40% felt avatars could foster esprit de corps



Blended Learning for SOS



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- Developing methodology to determine LVC “right mix” based on expected learning outcomes
- Study utilizes SOS as a case study for applying methodology to convert existing courses into an active *Blended Learning* program
- Increases course effectiveness, maximizes enrollment and reduces costs
- Study success could be applied to a much broader range of PME courses



Projects and Programs



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- In Progress:
 - AF.edu (A6)
 - Huffman Prairie (AU)
 - MyBase – Public (AU)
 - MyBase – Education & Training (81 TRW)
 - ADL Course Conversion (A2/3)
 - “Classroom of the Future” (82 TRW)
 - “Keesler Online” (A6 and 81 TRW)
- In Planning:
 - Mobile Learning – Recruiting (AFRS)
 - Mobile Learning – Flight Line Mx (A4)
 - “Little DMO” (TBD)
 - Air Force Game (TBD)



Spiral 1: Collaborative Environment Capabilities & Milestones



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IOC: Email, Online Collab, & Storage Services

IM Services

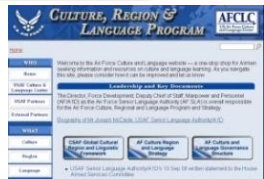
FOC: ~4.5K users



IOC: Commanders Connection

IOC: Email, Online Collab, Storage, & IM Services

FOC: ~8.5K users



AF Culture and Language Center Site



IOC: Email, Online Collab, Storage, & IM Services

FOC: ~5K users



AF.EDU Public

IOC: Keesler Online

FOC: Keesler Online Phase 2 ~30,000 users



Client-based email & CAC logon

Digital Encryption & Signature

Voice, Video, & Web Conferencing Services

- AF.EDU PROGRAM OBJECTIVES MET:**
- ✓ Deliver a world-class collaboration and research environment to AU, AFIT, & USAFA
 - ✓ Provide a less restrictive standardized Internet Access solution to AU, AFIT, & USAFA
 - ✓ Posture AF.EDU to support future AF "On Learning" initiatives and requirements

www.af.edu



Base Yr \$769K /Enh Cap \$195K			Op Yr 1 \$981K				Op Yr 2 \$930K	POM
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Jul 08 Sep 08 Nov 08 Dec 08 Feb 09 Sep 09 Oct 09 Oct 10

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Huffman Prairie



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MyBase – Public



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Basic Military Experience (Dining, Dorm, and Classroom).

MyBase South Airfield; includes tower, base ops, hangars, confidence course, and deployed camp.

Base chapel, club and theatre area.

Visitor center and administrative offices; also access to main metro station below ground.

Air Force museum with interactive displays.

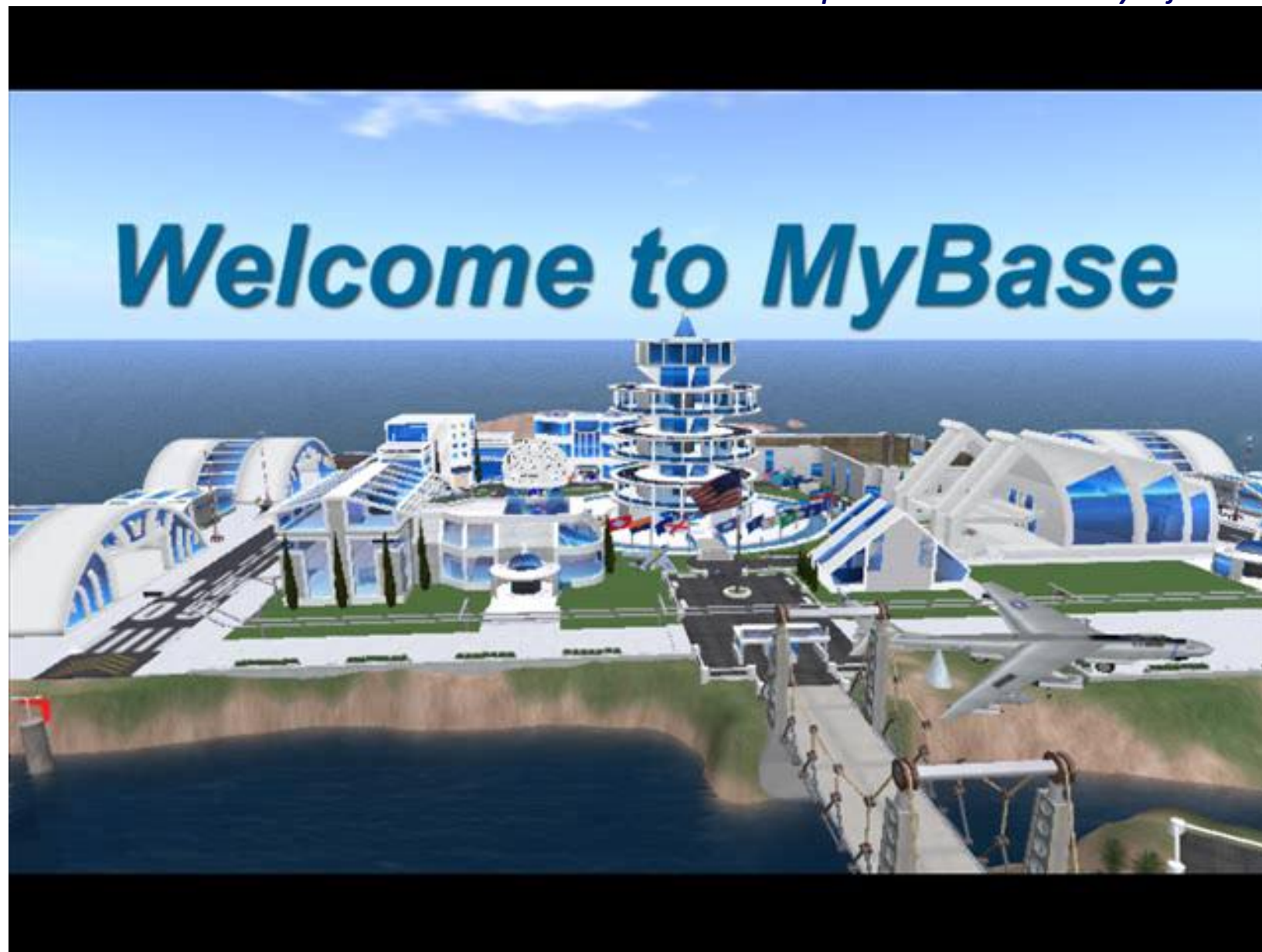
Front gate entrance to MyBase; with connecting access to other Huffman Prairie regions; includes Airman greeter bot at gate



MyBase – Public



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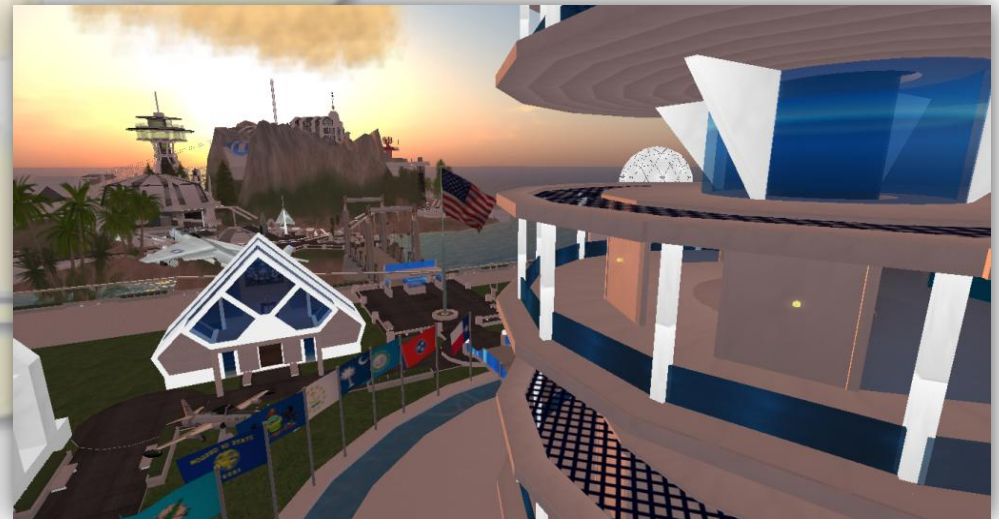
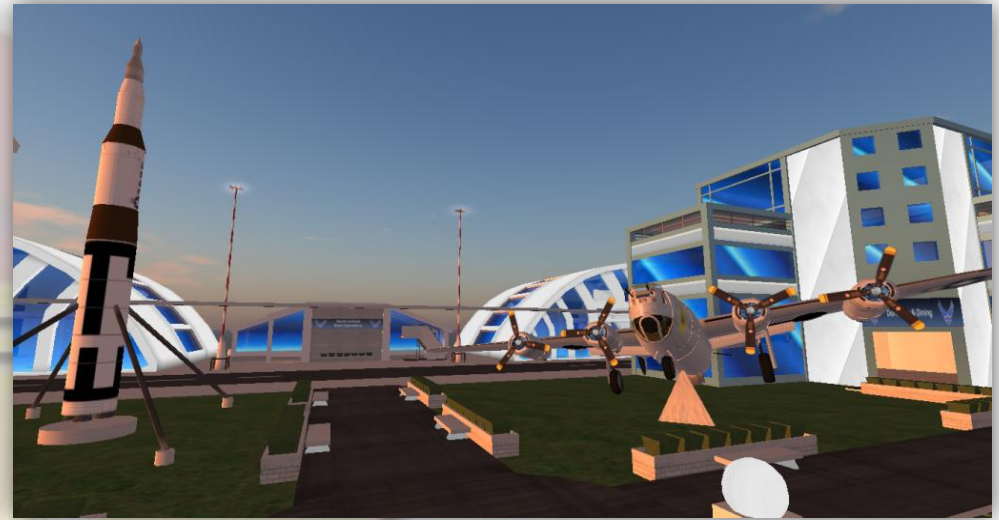
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MyBase – Public



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MyBase – Public



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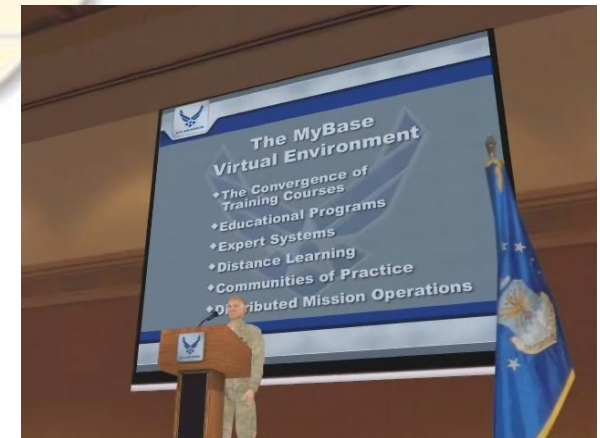


MyBase – Education & Training



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- Concept study to support *Future Learning Systems*
- Develops *MyBase* concept and conducts *Cyberspace Pilot Project*
- *Request For Information (RFI) published 15 Apr at FedBizOps.Gov*
- Transition two traditional courses into prototype online 3D virtual learning environment (MyBase)
- Operate 24/7 – synchronous & asynchronous
- Interactive video/audio training
- Virtual environment with avatars
- Online collaboration and live working groups
- *Meet course certification requirements*
- *Statement of Need (SON) released in Sep*
- *In Source Selection*
- *On contract Dec 08*





ADL Course Conversions



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- AFSO21 submission to invigorate Advanced Distributed Learning conversions of in-residence courses
 - Save \$11M+ annually in TDY costs
- Targeted only advanced and supplemental training
 - Initially \approx 3300 hours
- Courseware must be engaging, interactive, effective and contain advanced features (collaboration, simulations, etc.)
 - Fully aligned with “Future Learning” vision
- Hosted on AETC’s ADLS
 - 800,000+ registered users





Mobile Learning (mLearning)



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- mLearning project for AFRS recruiters and recruits
- Deliver learning whenever and wherever needed
- Ensure access to Knowledge Base information
- Enable quick, informal learning “on the go”
- Enable communication and collaboration
- Deliver learning content through videos, simulations and text messaging
- Matches learner needs



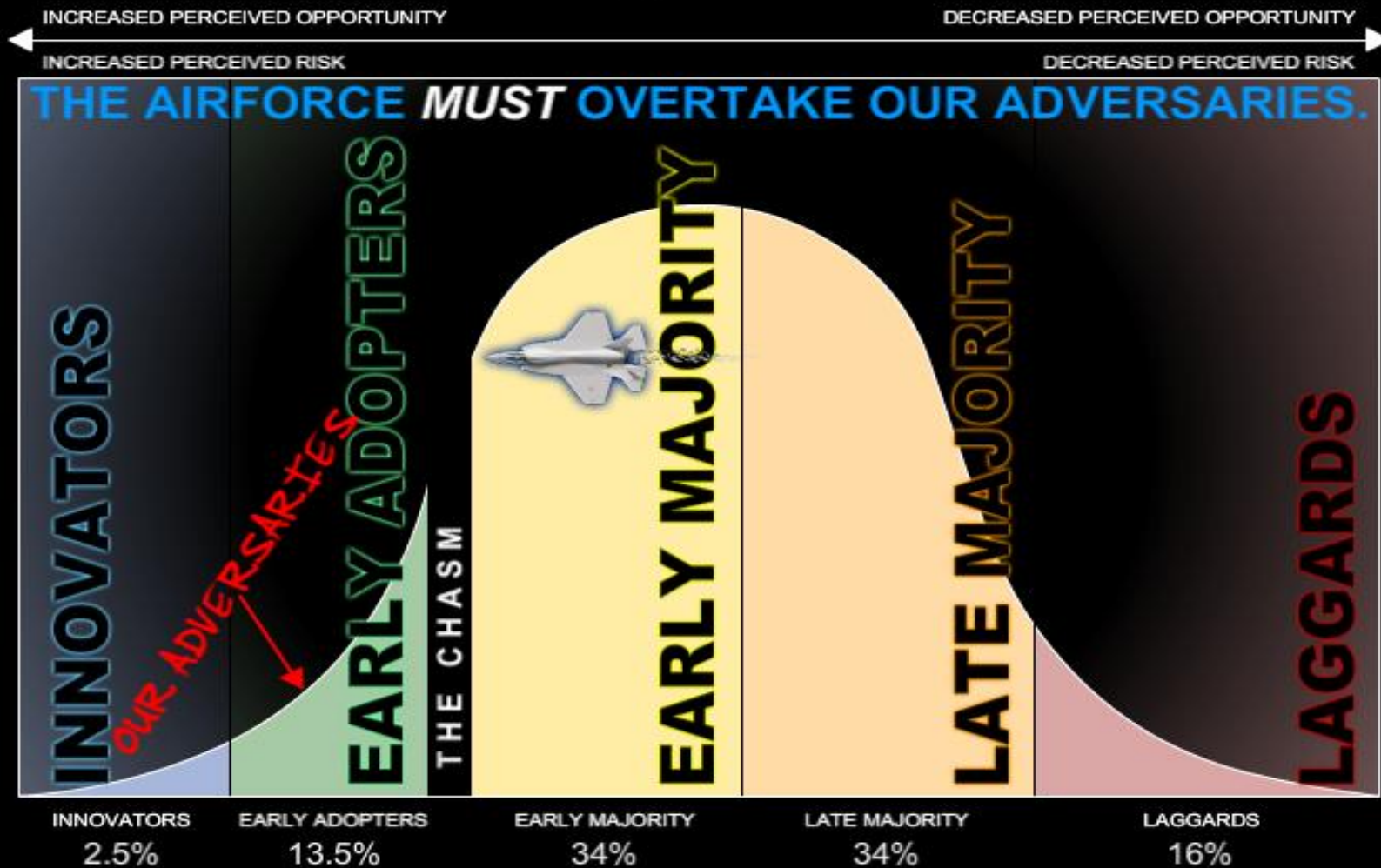


If not now...when?



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Crossing The Chasm



The Bohlen and Beal Technology Adoption Lifecycle



Conclusion



Develop America's Airmen Today ... for Tomorrow

“The Air Force's greatest asset – our Airmen – is a vital resource in our nation's defense and the key to winning today's fight. Our vision to deliver unrivaled air, space and cyberspace education and training must be as innovative and adaptive as our Airmen. Through developing and implementing advanced, creative learning today, we will build a solid and secure tomorrow.”

STEPHEN R. LORENZ

General, USAF

Commander, Air Education and Training Command

“We need to be on the cutting edge.”



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Air Education and Training Command

“The First Command”

The First Command