



Generational Challenges to the Net-Centric Future **

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** ...OR...My Teenager is a Future Warfighter??

Disclaimers

- All information presented here is **UNCLASSIFIED**, technically accurate, contains no critical military technology and is not subject to export controls.
- The views, opinions, and conclusions expressed here are those of the presenter and **should not** be construed as an official position of the United States Department of Defense.
- This presentation is intended to be **thought-provoking!** While its content is backed up by scientific findings, future projections are always speculative.

Take-away preview



To understand the meaning of the term “generation.”



To be aware generations bring shared attitudes, perceptions, key values and skills with them into the workplace.



To appreciate some potential mismatches between the digital future envisioned by Baby Boomers and Gen-X’ers versus that expected and supportable by Gen-Y and Gen-Z’ers.



To consider adjustments to policies, practices and initiatives that may poise the U.S. Department of Defense (DoD) to better serve the digital needs and expectations of upcoming generations.

What is a generation? (1 of 2)

political upheavals

discoveries / innovations

social changes

fads

- A generation is a group of people who share a range of birth years and therefore life stages...

economic trends

cultural events

musical genres

collective experiences

Animated slide

What is a generation? (2 of 2)

World War
political upheavals
Berlin Wall falls
Gameboy
fads
pet rocks

atomic bomb
discoveries / innovations
polio vaccine
female suffrage
social changes
Legal drinking age

- ...and significant common experiences from the world around them.

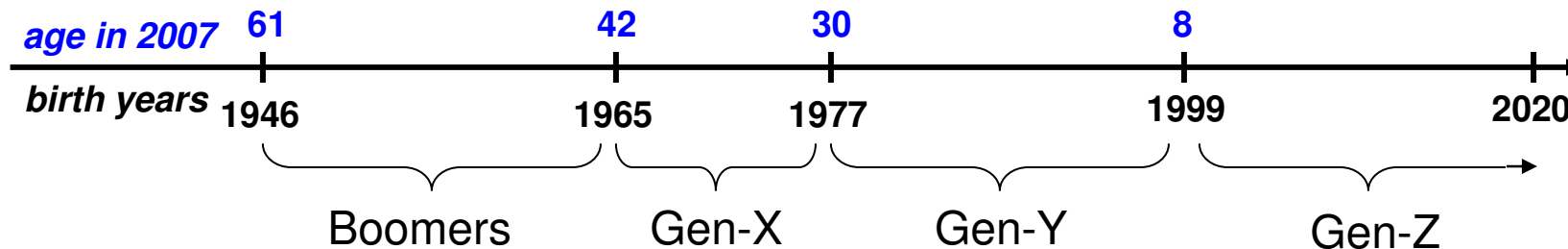
Great Depression
economic trends
stagflation

World Fair
cultural events
Olympics

rap
musical genres
swing

assassination of JFK
collective experiences
first moon walk

What are some common generational monikers and generic characteristics?



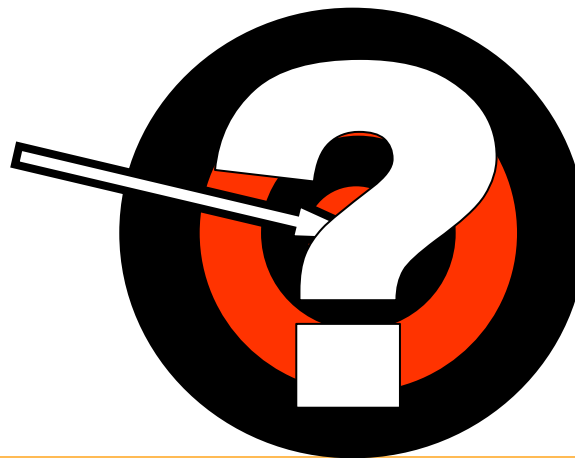
- Ego-centric about life experiences
- A pattern of age-correlated attitude transformations
- Belief that the next generation will be the downfall of all humankind **
- Outliers: those behind- or ahead-of-their-time

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** The recurrence of this belief is argued quite convincingly by Wartella & Jennings in "Children & Computers: New Technology, Old Concerns," www.futureofchildren.org

DoD's net-centric future vision

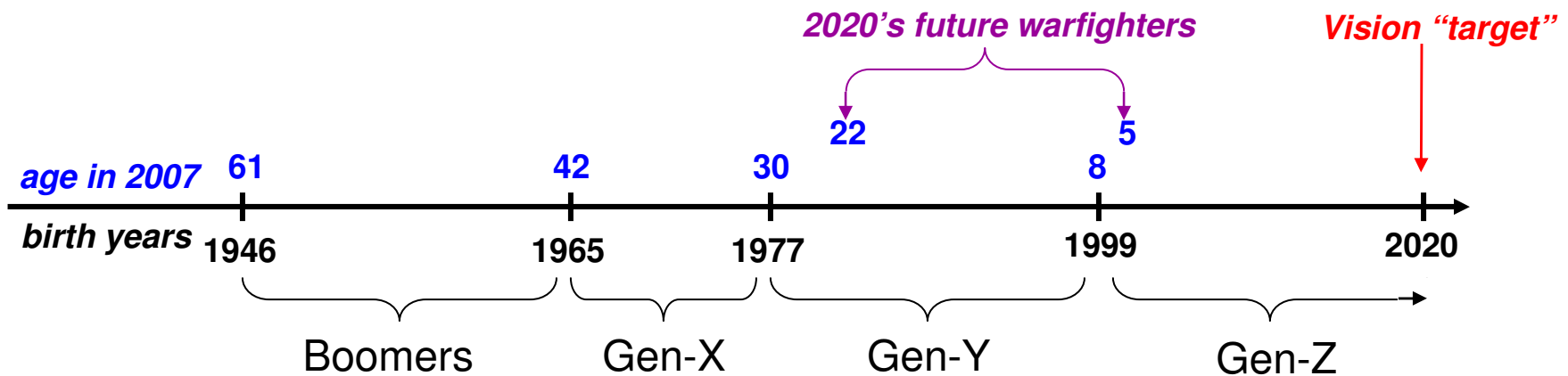
- **Net-Centric Vision: The U.S. Department of Defense's (DoD) plan to evolve its physical and logical infrastructure into a web-enabled information sharing space.**
- **The vision was established by leaders several generations removed from the warfighters who will use it.**
- **Will the net-centric vision meet the needs / expectations of future warfighters??**



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Generational & net-centric vision timelines

my teenager is a future warfighter??!



The age range of the enlisted ranks in the military is generally cited as falling between 18 and 24, with the first several officer ranks (O-4 and below) generally ranging in age between 25 to 35 years.

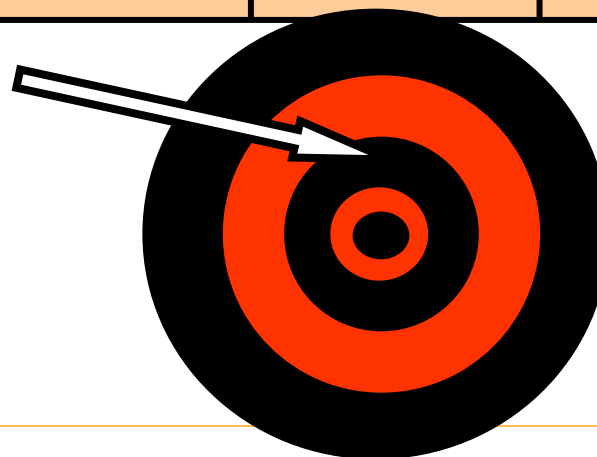
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“Digital immigrant” or “Digital native?”



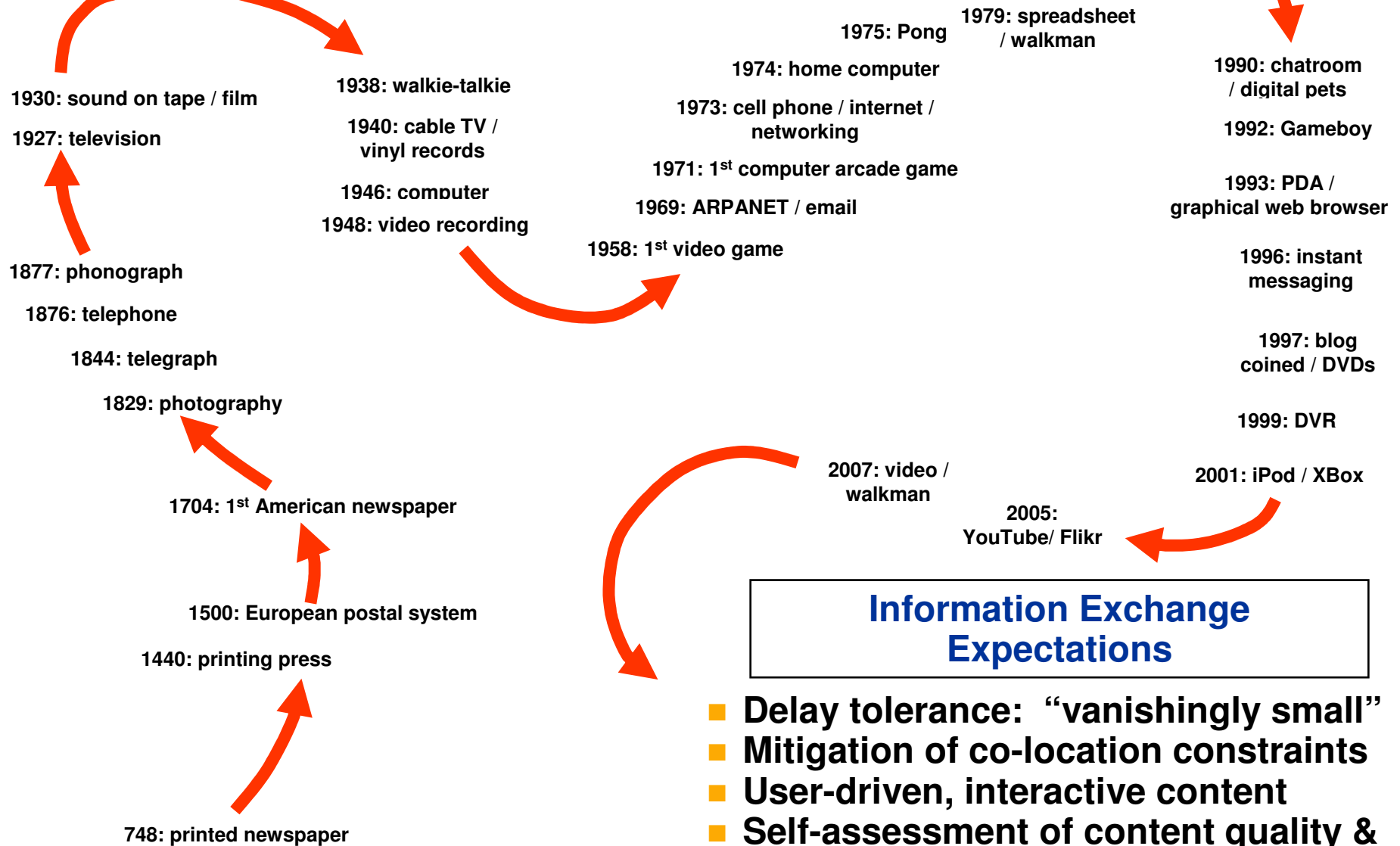
*Digital natives haven't simply **adapted to** technology the way immigrants have...they have been **shaped by** it.*

Technology Comfort Level	Boomers	Gen-X	Gen-Y	Gen-Z
	<i>Challenged</i>	<i>Proficient</i>	<i>Savvy</i>	<i>Immersed</i>
Net-centric Objective Role	<i>Visionary</i>	<i>Manager</i>	<i>Implementer</i>	<i>User</i>



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Technology impacts the generations



Information Exchange Expectations

- Delay tolerance: “vanishingly small”
- Mitigation of co-location constraints
- User-driven, interactive content
- Self-assessment of content quality & source authority

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“Information Glut”

Fact or figment of technology immigrants?

“In 2006 alone, the world generated 161 billion gigabytes of digital content.” – IDC Research Firm



All the books ever written...times 3 million!

— OR —



Search engines understand words ... future search tools must understand concepts and anticipate what the warfighter needs!

*Digital natives cannot even remember a time before the internet and ubiquitous access to media of all kinds...75% of teens have internet in the home and are online regularly ***

Animated slide

The “Halo Effect”

Digital natives — who are growing up fully immersed in gaming culture — expect autonomous, thinking systems and futuristic weaponry.

Examples: **

- Predator
- Multifunctional Utility Logistics Equipment
- Multiple Launch Rocket System
- Dragon Fire
- Bangalore Blade
- Electromagnetic Pulse Bomb
- Tavor Assault Rifle
- Expeditionary Fighting Vehicle
- Armed Robotic Vehicle



**Future Shift:
Non-lethal weapons**

\$ Will DoD be able to finance them? \$

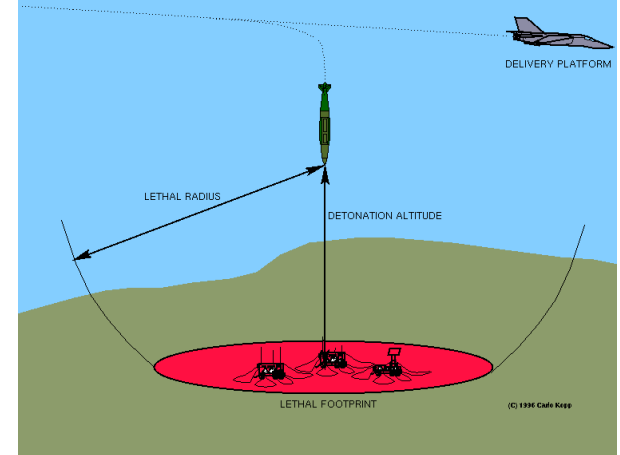
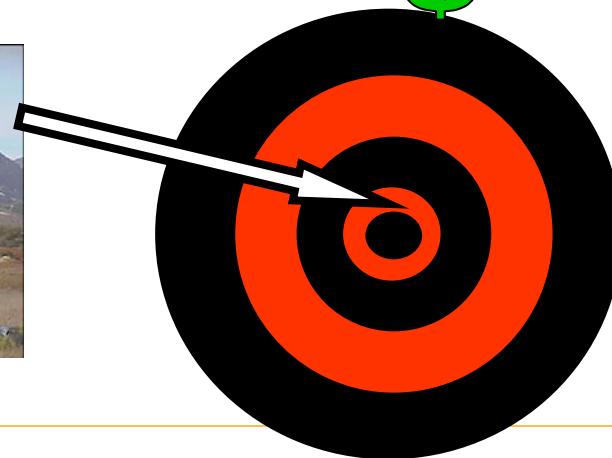


FIG.7 LETHAL FOOTPRINT OF LOW FREQUENCY E- BOMB IN RELATION TO ALTITUDE

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Video games improve visual acuity **

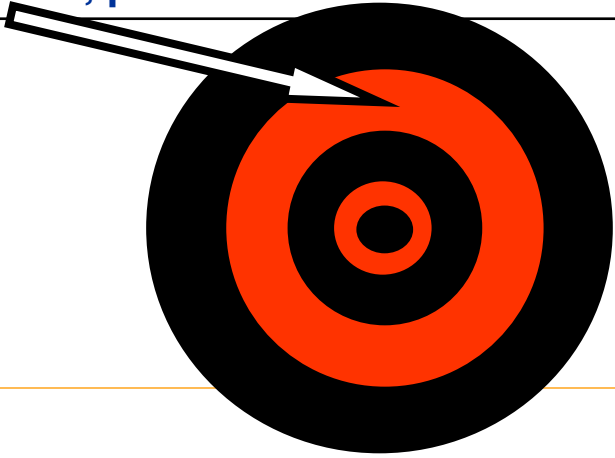
** This research reported by the University of Rochester Office of Communications, 6 February 2007, www.rochester.edu/news/



Students had to quickly identify the orientation of the middle "T"

*...
Action game players could do it better!*

**"Action video game play changes the way our brains process visual information."
— Daphne Bavelier, professor of brain and cognitive sciences**



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Profile of the Future Warfighter?



- Cheating and gaming go hand-in-hand, and it can foreshadow cheating in other aspects of life. ¹
- Significant numbers of teachers & administrators believe students are not motivated to learn, and are not optimistic about student potential in community college or university. ²
- Recruiters must “sell” military service to parents as well as recruits. ³
 - “Helicopter parents,” “Black Hawks,” “boomerangers”
- Future recruits may seek adventure versus careers. ⁴
- Gen-Y [and Gen-Z] see themselves as free agents; groups are self-forming and transient ⁵

¹ Tim Dodd, Center for Academic Integrity, Duke University

² “Where We Teach,” Council of Urban Boards of Education Survey of Urban School Climate, 2007

³ See “Make it a two-way conversation,” www.todaysmilitary.com

⁴ See www.dosomethingamazing.com

⁵ Kaye & Jordan-Evans, “Love ‘Em or Lose ‘Em,” 2005

Course Corrections



DoD should leverage the talents of appropriate generations as it designs, manages, implements and uses the net-centric environment.



“Information glut” probably isn’t a problem to future warfighters as it is to “technology immigrants” ... but DoD must set its sights higher than “Google-for-the-Warfighter.”



DoD must find and commit funding for producing systems and weapons prototyped with future warfighters in mind.



Net-centric visualization concepts need to take into account potential long-term effects of video gaming on how future warfighters’ brains process visual information.



Gen-Y and Gen-Z are socialized differently from contemporary warfighters. Military culture may need to adapt to incorporate them.

Pointers to more information

- www.futureofchildren.org
- www.discovery.com/futureweapons/
- www.kff.org/entmedia/entmedia030905nr.cfm
- www.todaysmilitary.com
- www.dosomethingamazing.com

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ACRONYMS

- **DoD = Department of Defense**
- **Gen-X = Generation X**
- **Gen-Y = Generation Y**
- **Gen-Z = Generation Z**
- **IDC = International Data Corporation**
- **JFK = John F. Kennedy**
- **PDA = personal digital assistant**
- **UAV = unmanned**
- **U.S. = United States**



QUESTIONS