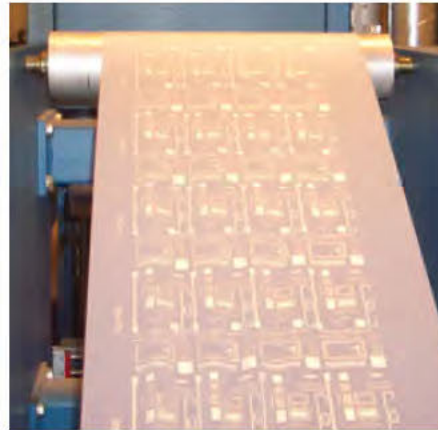
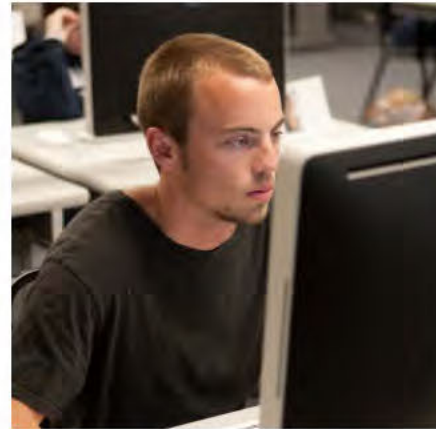


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CAL POLY[®]
SAN LUIS OBISPO

Colleen Twomey
Assistant Professor



GrC

Graphic Communication
California Polytechnic State University, San Luis Obispo

FPPA 15th annual convention



Agenda



- Why SLO?
- Why Cal Poly GrC?
- GrCI Research
- How can Cal Poly impact FPPA members?
- Trends in “Electronic Enabled” packaging



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Why San Luis Obispo?



+ Why San Luis Obispo?



New Year's Eve, 2011.



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Why Cal Poly GrC?





Defining Graphic Communication

- Graphic Communication(s) - The processes and industries that create, develop, produce, and disseminate products utilizing or incorporating words or pictorial images to convey information, ideas, and feelings.



From web design



To printed, converted product



GrC Department Beliefs & Missions



- “Learning by doing”
- Practical education with strong theoretical foundation
- Excellence
- Family
- Promoting the importance of graphic media, reading, and literacy





Why Cal Poly GrC?

- 65 year history
- Bachelor of Science in *Graphic Communication*
- “Learn by doing” approach
- Senior research project
- University Graphic Systems (UGS) student printing company
- GrC cosponsored workshops with FFTA
- Print trials, materials testing, custom training
- Continuous recipient of student scholarships, Phoenix Challenge, other FTA awards.





Why Cal Poly GrC?

Approximately 300 Majors and 50 Minors

- Design Reproduction Technology
- Graphics for Packaging
- Graphic Communication Management
- Web and Digital Media
- Individualized Course of Study



Over 3,000 alumni

- Industry leaders
- Prosperous families
- Innovators and critical thinkers

Over 33,000 square feet of laboratories

- Design technology
- Prepress and pre-media
- Traditional press – Sheetfed and web
- Digital press
- Flexography
- Finishing
- Substrates, ink, and toner testing
- Specialty printing and packaging



Why Cal Poly GrC?



- The industry believes in the quality of education we provide
 - Generous donations of state-of-the-art equipment, technology, software





Why Cal Poly GrC?





Why Cal Poly GrC?

- Student passion of our industry!!!
 - Mat Pica Pi
 - Technical Association of the Graphic Arts (TAGA)
 - Friends of the Shakespeare Press Museum
 - University Graphic Systems (UGS)
 - Phoenix Challenge
 - Poly Pack
 - School of Packaging Science





GrCI Research

- Graphic Communication Institute
 - Research
 - Industry seminars
 - 50 instructional talks at Graph Expo
 - Consults
 - Lab testing
 - Special projects
 - Use of entire lab space





How can Cal Poly impact FPPA members?

- Provide students who know
 - Prepress for flexo
 - Hands-on experience with running presses
 - Structure design
 - Consumer Packaging
 - Color Management
- Incorporate fast-changing trends into curriculum
- Constantly ask ourselves, “What’s next”?





How can Cal Poly impact FPPA members?

- School of Packaging Science
- International Safe Transit Association Certified Lab
- Material testing
- Prototyping
- Plastic Processing
- Eye tracking





The face of Packaging has changed.....

- Packaging has moved beyond the purchase, and moved into an experience.
 - Social media connection
 - PURLs
 - Interactivity
 - Movie/video trailers
 - Website information
 - Gaming
- Packaging has very precious real estate to “lend” to promote its products.





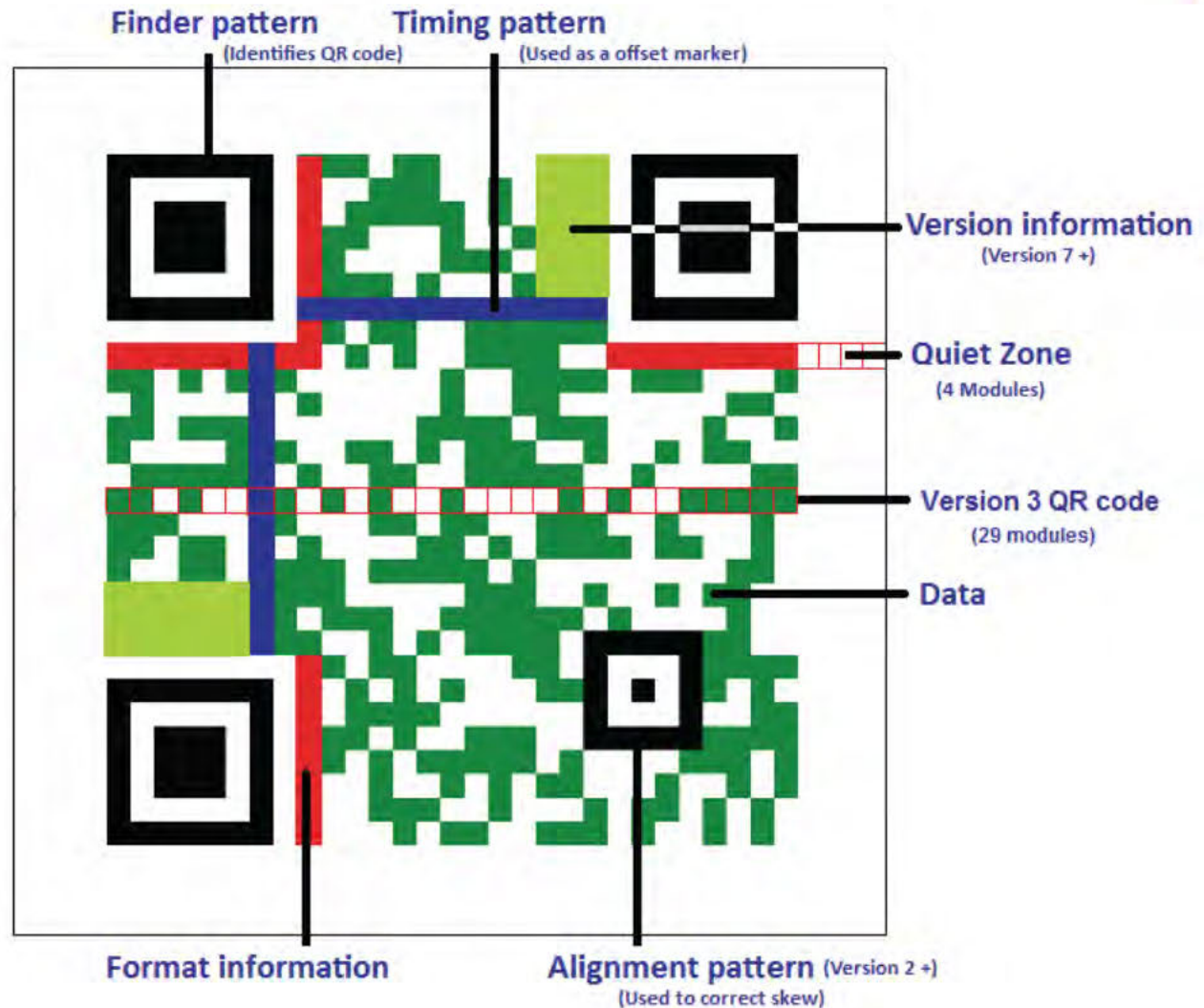
QR Codes

- QR codes were developed in the mid 90's by a division of Toyota
 - Track vehicles in mfg process
 - Now ISO standard
 - Over 7000 characters of information
- Now, QR codes can track
 - Entertainment and transportation ticketing
 - Product loyalty (mobile coupons)
 - URLs, PURLs
 - Etc...





QR Code Anatomy



+ QR Code Requirements



Good Contrast



Avoid Knockouts



Sufficient White Space



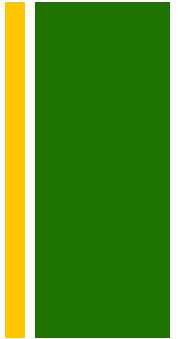
Credit: Michael Phillipson,
Phillipson Group





QR Code Requirements

- Size does matter
 - Min 1.5" x 1.5"
 - Larger codes can hold more data
- Whitespace (quiet zone)
 - Min 4mm
- Scanning distance
 - 1.5" code can be scanned at 10 cm distance
- Vehicle
 - Paper, packaging, posters, computer screens
- Resolution
 - Low res files don't enlarge well
- There are many free QR code generators





QR Code: Design



Test, Test, Test, Test.....

+ Snap Tags by Spyderlink

- Similar to QR Codes, but
- Instead of code, a company's logo can be used
- The logo is surrounded by rings with breaks at certain locations
 - Traditional packaging
 - "stickers"
 - Fabric, etc..

SNAP TO GIVE
Give \$5 to Susan G. Komen



When prompted, reply "YES" to confirm your gift. Your donation will be applied directly to your cell phone bill.



Standard message rates apply.





Snap Tags

- Contests
- Coupons
- Loyalty
- Products
- Content
 - Don't need a smart phone

SNAP A PHOTO, SEND IT TO

PLAY THE
GO BACK
smarter
INSTANT WIN GAME

Msg & Data Rates May Apply

SnapTag by SpyderLynk

AT&T, Verizon, Sprint, T-Mobile text to **762748**
all others email to od@snaptag.mobi



+ Snap Tag Anatomy

Bars with breaks



Company Logo

Snap & Send or Scan



Campaign Response

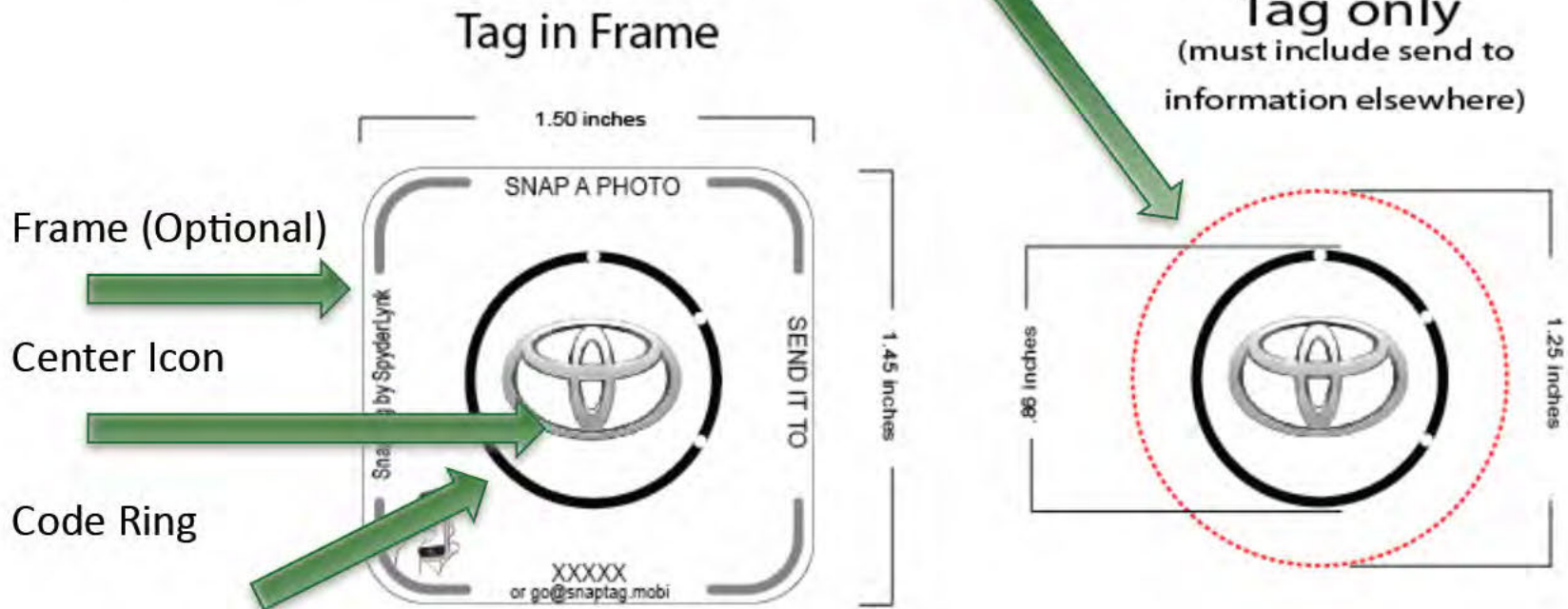


Multimedia
algorithm-driven
responses
engage consumers
in sophisticated
marketing
campaigns.

+ Snap Tag Requirements

- Size does matter

White space required





Snap Tags

- Size does matter
 - EPS, AI or PDF files work
 - Logos must be dark, background should be near-white
 - Logo cannot be a circle
 - Only matte surfaces
 - Only flat surfaces
 - Surfaces must be accessible to consumers within 10 feet
 - Billboards are not recommended
 - ..AND Snap Tags are not free!





NFC

- Near Field Communication
 - Like using a QR code, but....NOT.
 - Need 4G phone with NFC Reader
 - Includes NXP chip
- Applications include
 - Google Wallet
 - “Pay by Phone”
 - And other “QR” applications
- NOT print dependent!





Augmented Reality

- ...and now for something completely different...
 - A/R engages consumer at point of sale (interactivity)
 - A/R has the “unique” and viral-factor (great for social media)
 - A/R enables content to be delivered without sacrificing significant packaging real-estate
- Augmented reality (AR) is the integration of digital information with live video or the user's environment in real time.





Augmented Reality

■ Requirements

- Video or photo capture software
- Marker (could be bar code or series of geometric shapes)
- Users download app (need web camera and internet access)
- When the app sees the marker, it executes the code for the A/R



+ An interesting future?

■ Security

- Anti-counterfeit
- Smart label

■ Printed Electronics

- Smart / active packaging
- Scented Inks

■ Sustainability

- Renewable substrate

■ Interactive printing

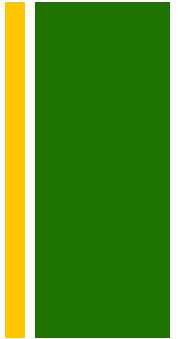
- SMS
- Barcode





What are printed electronics?

- Mass-produced simple electric and electronic components, usually on flexible substrates
- They are enabling technologies for the creation of new products and include novel items such as: energy harvesting items, display items, smart packaging, security items, and other functional items to improve society
- They are projected to become a \$55 billion market before you retire





What is needed to print *electronics*?

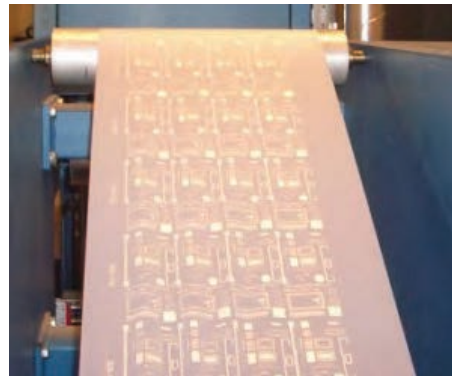
- Design & Engineering
 - Novel concepts
 - Circuit designs
- Materials (inks & substrates)
 - Conductive
 - Dielectric
 - Semiconductive
- Precise patterning and application methods
 - Printing/coating technologies and techniques
- Market size predicted to be USD \$ 55 billion before you retire





Introducing the MS degree in Printed Electronics and Functional Imaging

- Certificate program-online
 - Benefits international students
 - Full time employees
- MS degree completion on campus
- Starts Fall 2013





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Thank You

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