

OR & IT initiatives in Tirupati

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Overview of the Talk

- Tirumala Tirupati Temple
- TTD (Tirumala Tirupati Devasthanam) Organization
- Challenges in pilgrim management
- Circa 1985 – 1999
- Circa 1999 – 2002
- Circa 2003 – 2007
- Circa 2008 – 2013
- Circa 2014 – 2015
- Conclusions
- Q & A

Tirumala Tirupati Temple

- Located in Andhra Pradesh (150 Km from Chennai, 255 Km from Bangalore, 600 Km from Hyderabad)
- **Tirupati** at the foot hills. **Tirumala** on the hill (19 Km by road)
- One of the most sacred temples in India
- History of thousands of years, with royal patronage over several centuries
- Visited by 60,000+ pilgrims every day, with up to 500,000 people on select days

TTD Organization

- Forward looking, visionary organization
- Perhaps the richest in its class
- Pilgrim friendly organization
- Very competent – Executive officer and two Joint Executive officers drawn from senior civil servants, engineering, revenue department for estate, purchase, transport, forest, security etc., handled by professionals
- Committed to providing free access, *darshan*, *tonsuring* and food to tens of thousands every day

Challenges in temple management

- Very large number of pilgrims – 60,000+ every day, up to 500,000 on some days
- Very diverse pilgrims
 - Devout individuals to heads of mutts
 - Ordinary citizens to Chief Minister / Prime Minister / President
 - Poorest of the poor to richest of the rich
 - Clerk to Chief Secretary / Cabinet Secretary
 - Ordinary to celebrity film stars, sports persons
 - Remote India to international metros
- Varied expectations, hallowed traditions
- The main sanctum sanctorum is inside a small stone mandapam enclosure, making the management of queue a fairly complex process

Circa 1985 - 1999

- Focus on physical queue management with construction of Vaikuntam Q complex to accommodate about 14000 pilgrims.
- Improved discipline
- Replace difficult waiting to comfortable waiting
 - Queue complex (large investment) to hold the large queue in dozens of compartments with A/C, water, bathroom, food
 - no control on maximum waiting time (4-24 hours)
- Priority queue – control maximum waiting time (1-3 hours) – VIP / “price” based mechanism
- Computerization of priority queue management

Circa 1999 - 2002

- Dr. I V Subba Rao (fresh thinking, fresh after PhD from UPenn); chance meeting during OR conference
- Replace physical queue with logical queue using bar code (minimal investment)
- Challenge of
 - Fast bar code printing
 - Wear & tear resistant
 - Simple to use, multiple terminals
 - Reliability, maintainability
 - Low cost

Sudarsanam

- Bar-code based wrist-band (wearable!)
- Glued to the person to maintain fidelity
- Fast enough to print (less than a minute)
- Fast enough to verify (less than 10 seconds)
- Instant success!
- Myths exploded
 - Poor resist change
 - Rural will not accept technology
 - Illiterates are not tech-savvy
 - Bar-coded wrist-bands will not work
- Extended to multiple location in Tirumala & Tirupati (LAN, WAN)

Circa 2003 - 2007

- Sudarsanam success leads to multiple technology options
- Bar codes to biometric (finger print based identification) that is less prone to “manipulation”
- Sudarsanam goes beyond Tirumala – Tirupati to locations all over India (WAN)
- Web-site with multi-media
- E-Hundi (Payment gateway)
- Internet-based services
- Inter-linking of accommodation and other services

Circa 2008 - 2013

- Net-based services and biometric integration
- Web-site moves beyond plain web-site into a portal
- SVBC TV Channel
- Integration of SVBC with TTD web-site
- Rich multi-media

Circa 2014 - 2015

- Sudarsanam is part of many services in TTD
- Web-site is very much part of TTD.
- Rs.300/- Special darshan tickets across the net, specified e-darshan centres & post offices.
- Near real time update of information
- Dash board with KPI (Number who reached by walk, had free *Darsan*, free tonsure, free laddu prasadam, free annaprasadam) updated within 24 hours every day on the next generation “metro style” portal
- Separate YouTube channel and other social media
- So many private web-sites and services that leverage TTD!

Summary

- Queue management of diverse large-scale people is possible through slow, but steady adoption of technology
- IT can benefit social cause even in remote rural areas
- IT for development is real
- Strategic intervention is a must
- Any questions?