



WITS

WINE INDUSTRY
TECHNOLOGY
SYMPOSIUM

Handheld Technology in the Vineyards: How we use it



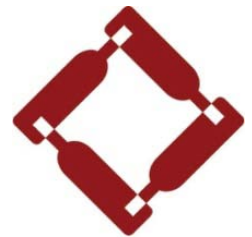
PremiereVision

Web Based Vineyard Management System

Garrett Buckland

Premiere Viticultural Services

July 16-17, 2009 Napa Valley Marriott



WITS

What are we looking to Do?

- GIS, GPS Mapping applications
- Simple Data collection
- Data dissemination
- Turn our handhelds into our primary work tool; replace the laptop?
- Be connected all of the time
- Use this technology to make smarter decisions, save money, and become more efficient



**"A wealth of information creates a
poverty of attention"**

Herbert A. Simon (1971)

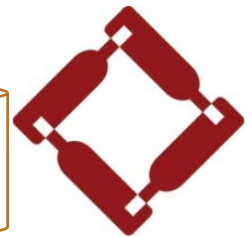
7/23/2009



**soils climate rootstock
clones pest diseases
irrigation canopy mgmt
harvest chaos sales
petioles nutrients
weather NDVI
pressure bomb
hang time
chemistry
water**



DATA "AT REST" / BLACK HOLE



WITS



Challenges and Opportunities

- Managing increasing complexity
- Accessing current and historical information
- Planning farming activities in advance
- Using inputs more efficiently
- Tracking activities and inputs
- Increasing the effectiveness of the viticulture staff
- Improving communication

Making better decisions



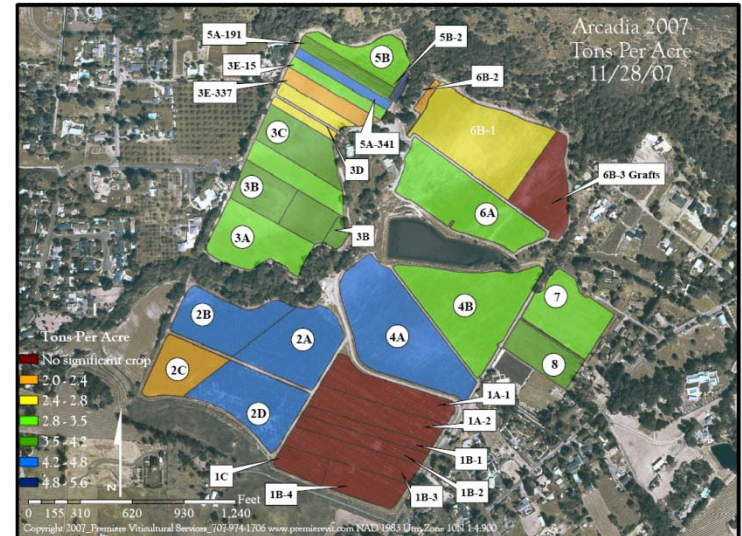
What is a Handheld? What is a Smartphone?



- Phone
- email
- User interface
- Keyboard
- Touchscreen
- Most important --WEB BROWSER--

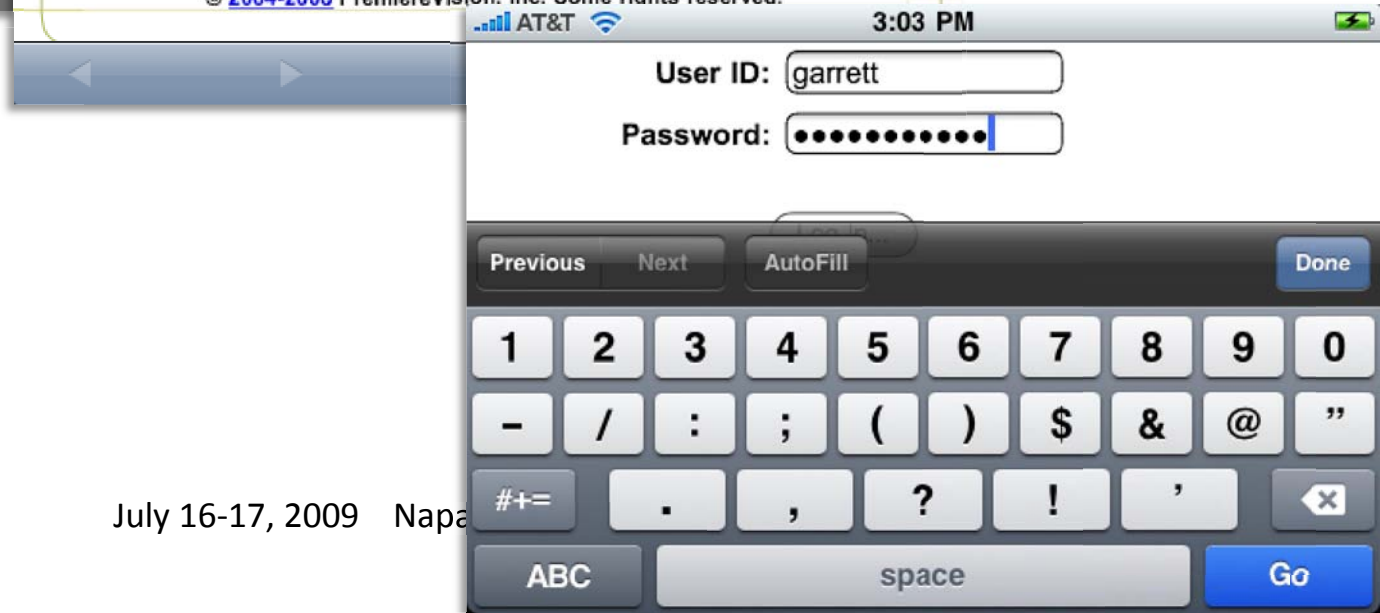


GPS Mapping in the field





Login—Secure Server Web based, actively browsing all of the time



July 16-17, 2009 Napa



Looks just like the Desktop view
Just smaller. Most smartphones have
the ability to zoom in. This is Key,
especially as we lose our eyesight

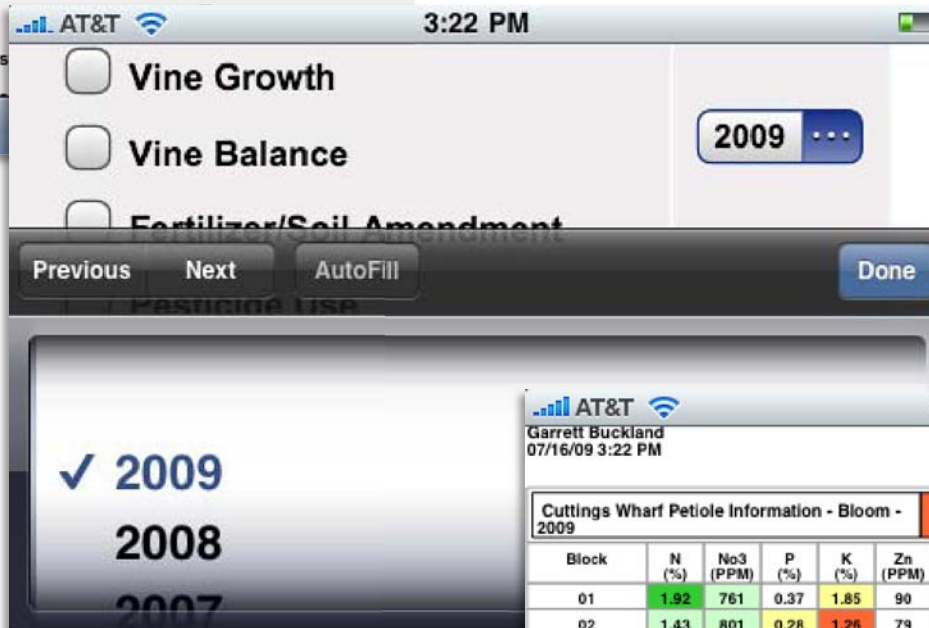


Access Maps, reports, Update
Data, send emails, all from
the field.





Grab specific reports, Data at your fingertips 24/7 in the field and at the office.



Garrett Buckland
07/16/09 3:22 PM

707-944-9228
www.baldaccivineyards.com

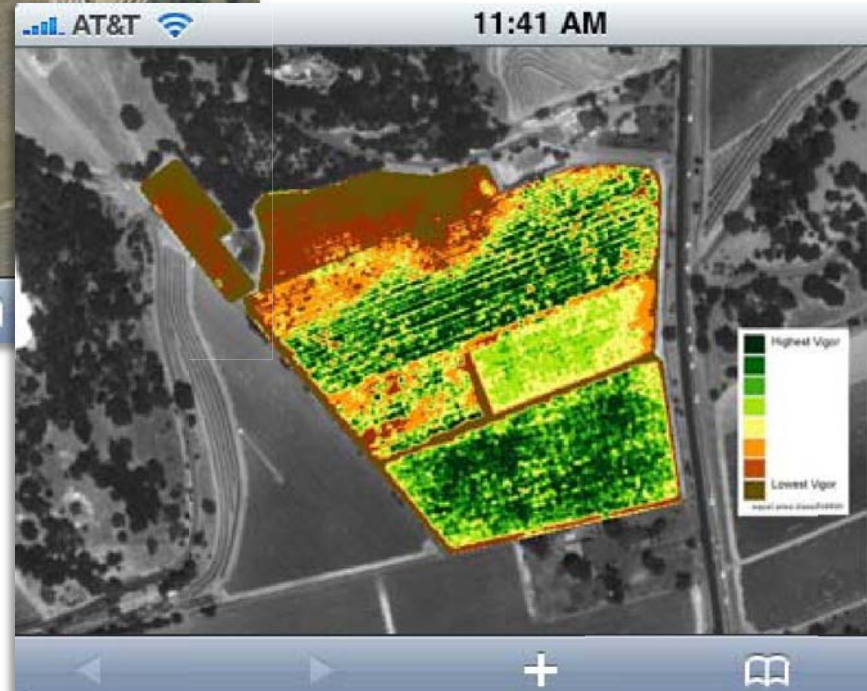
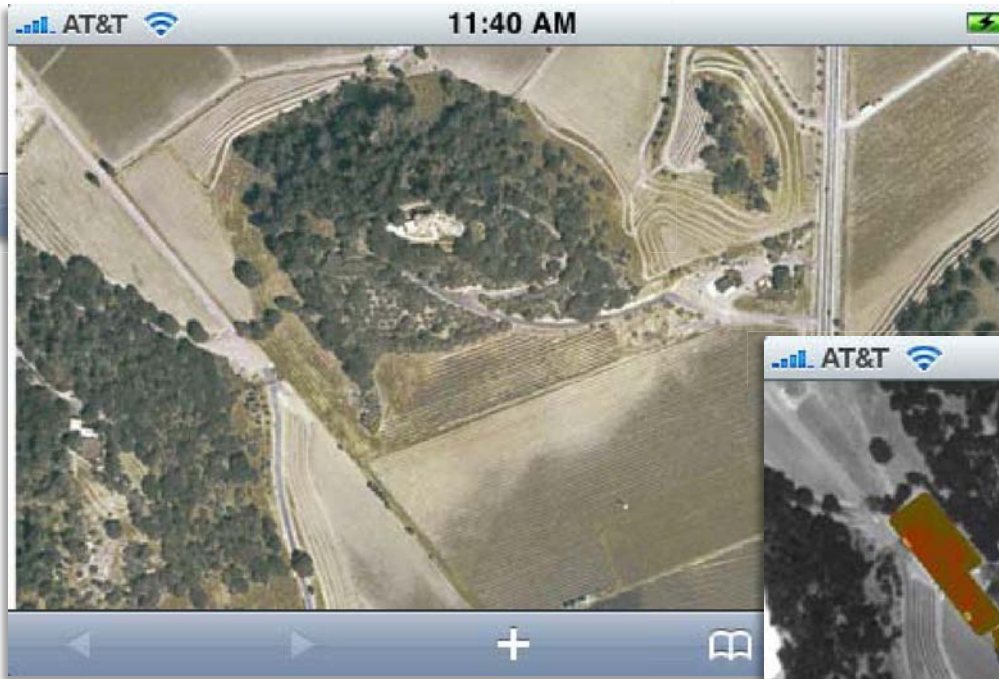
Cuttings Wharf Petiole Information - Bloom - 2009

Block	N (%)	No3 (PPM)	P (%)	K (%)	Zn (PPM)	Mn (PPM)	Fe (PPM)	Cu (PPM)	B (PPM)	Mg (%)	Ca (%)	Na (%)	S (%)	Mo (PPM)
01	1.92	761	0.37	1.85	90	158	48	23	30	0.52	1.72	0.04		
02	1.43	801	0.28	1.26	79	165	40	17	26	0.66	2.16	0.03		
03	1.43	801	0.28	1.26	79	165	40	17	26	0.66	2.16	0.03		
04	1.84	1608	0.19	1.79	102	225	41	21	35	0.72	1.83	0.02		
05	1.15	637	0.31	2.33	125	321	31	26	39	0.77	1.89	0.04		
06	1.58	895	0.42	2.28	72	182	36	26	32	0.56	2.12	0.04		
07	1.7	1218	0.23	3.08	76	178	28	26	46	0.61	1.74	0.04		
08	1.84	1608	0.19	1.79	102	225	41	21	35	0.72	1.83	0.02		
09	1.63	1259	0.24	2.11	104	134	32	19	39	0.56	1.66	0.02		
10	1.54	1043	0.35	3.22	109	102	35	20	51	0.49	1.85	0.03		
11	1.63	1259	.24	2.11	104	134	32	19	39	.56	1.66	.02		

Pull tissue samples Directly on the phone, make decisions in the field. Saves time and Intellectual Capital. Which usually translates to saving Money



Access Maps, Images, NDVI's, Spatial Information. 3G connections make large data transfer easy. Newer Browsers can zoom with great resolution. (safari)



11:54 AM

Vineyard Update | Operational Update | Nutrient Update | Health Update | Canopy Update | W

Pressure Bomb Update

Langley Vineyard

Block	Test Date	Sample 1	Sample 2	Sample 3	Sample 4
1	07/15	13 . 2			
2					

Update data directly from the field
 Pressure Bombing; immediately design a
 irrigation schedule with real-time data.

11:54 AM

Sample 1	Sample 2	Sample 3	Sample 4
13 . 2	13 . 5		

Previous Next AutoFill Done

4

✓ 5

6

7

11:44 AM

Irrigation Scheduler

Report for: [dropdown]

Show All Vineyards Refresh Stags Leap to Current Date - 07/17/09 Save and Calculate

Rec	Vineyard	Block	Variety	Rootstock	Date	Days Covered	Day of Week	ET %	Hours	Override?
<input type="checkbox"/>	Stags Leap	1	Cabernet Sauvignon	5C	06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	2	Cabernet Sauvignon	101-14	06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	3	Cabernet Sauvignon	101-14	06/1E			0	4	Override? ✓
<input type="checkbox"/>	Stags Leap	4	Cabernet Sauvignon	101-14	06/1E			0	4	Override? ✓
<input type="checkbox"/>	Stags Leap	5	Cabernet Sauvignon		06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	6A	Cabernet Franc	5C	06/1E			0	8	Override? ✓
<input type="checkbox"/>	Stags Leap	6B	Cabernet Sauvignon	5C	06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	7	Cabernet Sauvignon	110R	06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	8	Cabernet Sauvignon	110R	06/1E			0	0	Override? ✓
<input type="checkbox"/>	Stags Leap	9-12	Cabernet Sauvignon	St George	06/1E			0	0	Override? ✓

July 16-17, 2009 Nap



Stags Leap Vineyard - Block 1 - Year 2009

Activity	Planned Timing		Planned Protocol	Update
	Start	Stop		
Prune Vines	02/01/09	03/10/09	Show...	Update...
Tie Vines	02/01/09	03/10/09	Show...	Update...
Pull Brush	02/01/09	03/10/09	Show...	Update...
Mow-Chop Brush	03/06/09	04/20/09	Show...	Update...
Mildew Spray-Budbreak	03/20/09	04/10/09	Show...	Update...
Suckering Pass 1	04/07/09	04/21/09	Show...	Update...
Mildew Spray + Nutrients	04/10/09	04/20/09	Show...	Update...

Update Activity data directly from the field. See activities, when they're completed, what's next, what's budgeted

- Cultivation
- Cultivation-undervine
- Wire lift-Tuck shoots
- Mildew Spray-Oil
- Wire lift-Tuck Shoots Pass 2
- Rogue Noxious Weeds
- Mildew Spray
- Position Shoots

1:50 PM
 www.premierevit.com/premierevision/...
 Vineyard Overviews | View Data | Update Data | Admin | Help | User Profile | Feedback | Log Out

Vineyard Update | Operational Update | Nutrient Update | Health Update | Canopy Update | Water Update | Harvest Update | Wine Update

Activity Schedule Protocol: [input] [Cancel]

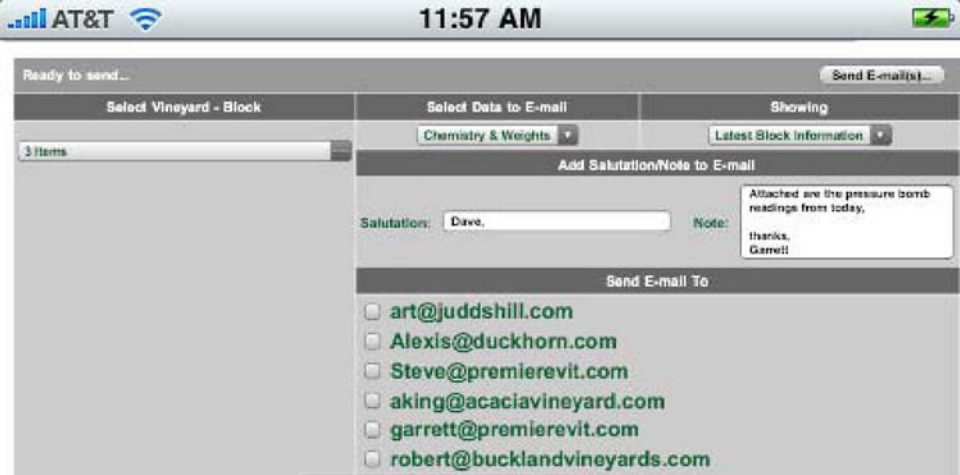
Thin Fruit-veraison - Actual(s)

Actual Timing		Total		Actual Protocol	Notes
Start	Stop	Man Hour(s)	Cost		
[input]	[input]	[input]	[input]	As Planned	[input]

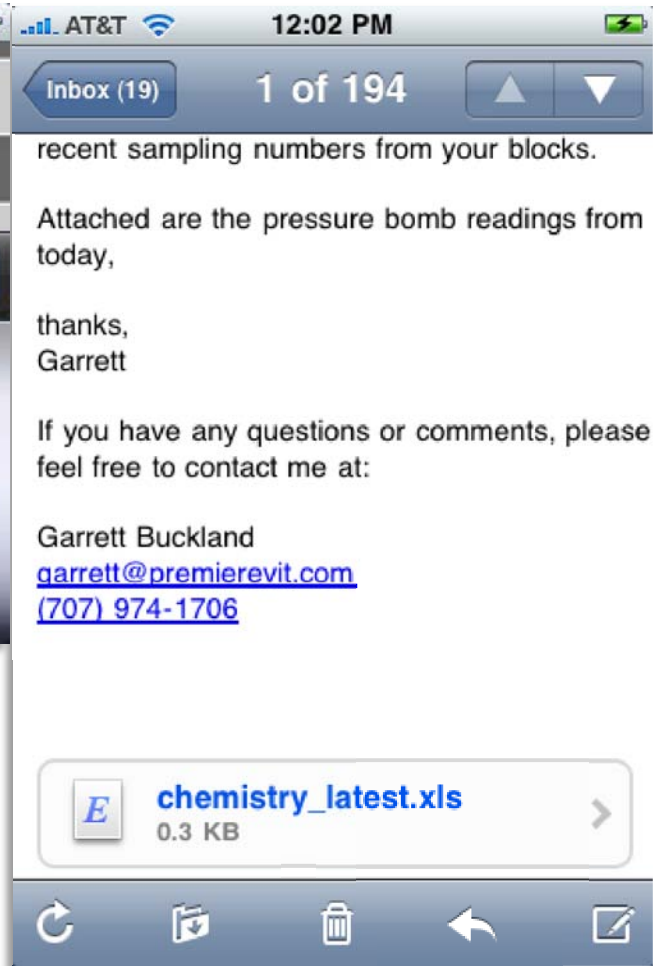
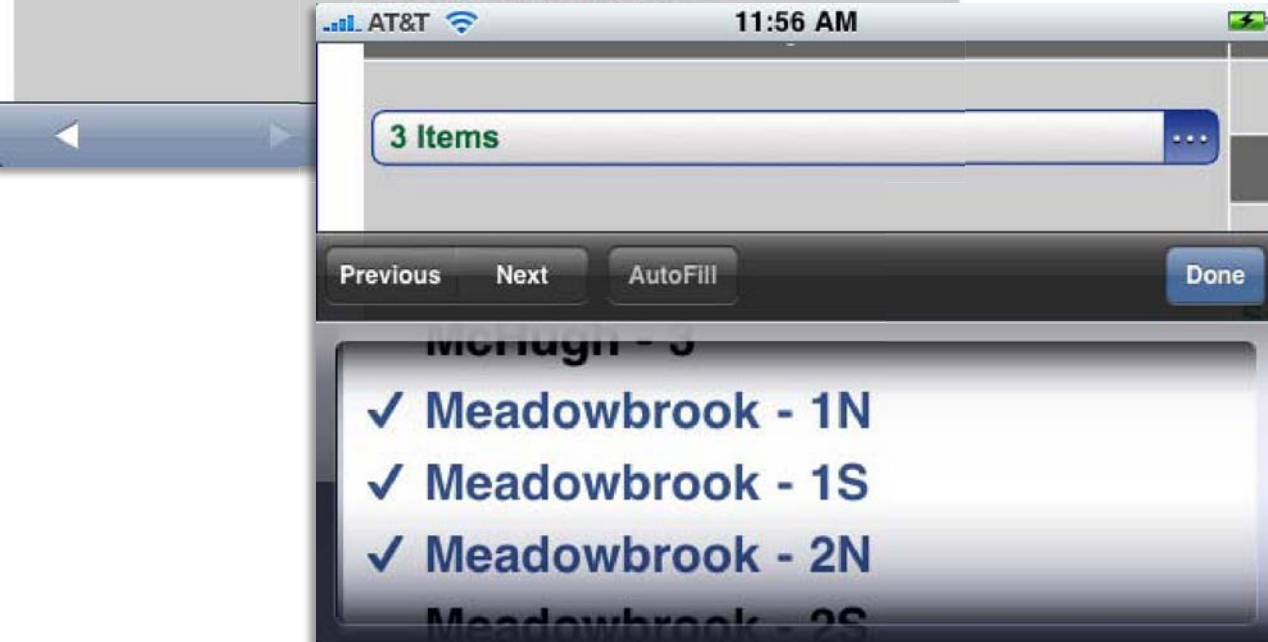
[Add] [Clear]



July 16-17, 2009 N



Closing the Gap between Data and end users. Email Data directly from database, no attachments needed. Problem with the iPhone mainly.



Email Data directly to other users or non users; sampling information, irrigation sampling records, yields, etc.



Vineyard Alerts

Vineyard	Alert Type	Actual Value	
Penn Valley	Air Temp	96.2 DEG F	07/16/09 - Max above 95 Deg
Penn Valley	Rel Hum	12%	07/16/09 - Min below 20%

Let the Data work for you:
 Distill third party data (example Weather data) Email or text alerts.
 Run Mildew Models, other pest modeling

AT&T 12:01 PM

Bridge (Upper) Station 2009

Mildew Index (0-10 No Risk) (20-30 Low Risk) (40-50 Med Risk) (60-100 High Risk) Show Entire Year: [dropdown]

Date	Precip (in)	Max Air Temp (F)	Min Air Temp (F)	Avg Air Temp (F)	Max Rel Hum (%)	Min Rel Hum (%)	Avg Rel Hum (%)	Avg wSpd (MPH)	Mildew Index	ETc	Deg Day
07/16/09	0.00	102.3	45.0	71.3	98	15	57	1	0	0.14	24
07/15/09	0.00	98.6	52.9	74.2	94	22	54	2	0	0.15	26
07/14/09	0.00	105.9	56.1	79.2	82	13	43	2	0	0.17	31
07/13/09	0.00	103.2	49.2	75.6	83	8	42	2	0	0.16	26
07/12/09	0.00	93.4	47.3	69.6	95	13	50	2	0	0.15	20
07/11/09	0.00	90.9	48.9	69.6	87	21	50	2	0	0.13	20
07/10/09	0.00	91.6	45.5	68.0	98	17	55	3	0	0.15	19
07/09/09	0.00	90.6	46.9	68.0	94	24	56	2	0	0.14	19
07/08/09	0.00	92.1	46.4	68.6	88	17	50	2	10	0.14	19
07/07/09	0.00	85.8	42.5	63.0	98	30	65	2	20	0.11	15
07/06/09	0.00	89.0	47.3	65.3	96	23	59	3	30	0.15	18
07/05/09	0.00	79.8	49.6	60.1	97	42	77	2	40	0.09	15
07/04/09	0.00	83.0	49.9	62.2	97	38	74	2	20	0.10	16
07/03/09	0.00	88.6	49.0	66.2	97	32	67	2	0	0.11	19
07/02/09	0.00	90.7	49.9	65.9	97	30	69	2	0	0.11	20
07/01/09	0.00	89.7	51.0	67.2	97	26	64	2	0	0.11	20
06/30/09	0.00	93.0	48.5	68.0	96	31	64	1	0	0.10	21
06/29/09	0.00	102.0	52.0	75.0	97	17	55	2	0	0.15	27
06/28/09	0.00	107.6	59.9	83.3	77	10	43	1	0	0.14	35
06/27/09	0.00	106.7	53.1	79.7	98	15	53	1	10	0.14	30

AT&T

12:18
Friday, July 17



PremiereVision Penn Valley
 PremiereVision alert:
 Penn Valley Air Temp 96.2 deg F

slide to view

Smartphones now allow for complex ways of alerting and disseminating data.



Summary

- Handheld units (smartphones) have made tremendous improvements in the past 10 years
- Every day there are new applications
- Where will we be in another 10 years
- Make our data work for us
- Build intellectual capital
- Use these tools to make our lives easier, and our staff more effective
- Push the limits of the technology, but only use it if it adds real value!





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