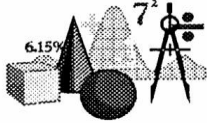# IEEE

SPARKS
Daytona Section Newsletter
January 2019

JANUARY SECTION MEETING
Thursday January 24th at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION- DIGITAL MARKETING

CHAIR'S REPORT

A Happy and Prosperous New Year to all section members. And I hope that all your 2019 resolutions are accomplished.

As an update, I am honored to be serving as the Daytona Section Chair beginning January 1st, 2019. I served the section as Vice Chair in 2017 and 2018. Beginning January 1st, the new Vice Chair is Helen B. Hernandez. We are fortunate to have Helen serving IEEE. She has already lined up speakers for many of the section meetings for 2019. My thanks to her for her good work.

Please remember to renew your IEEE memberships. If you have renewed, it does not hurt to check to make sure you have registered for everything you desire.

The Volusia County Schools and Tomoka Regional Science & Engineering Fair is being held on Saturday, January 26, this year at Stetson University in DeLand from 8 AM to noon. If you are interested in serving as a judge for this event, you can do so at the following link: https://www.surveymonkey.com/r/TRSEF2019 .

This is an early reminder that Engineers Week will be held from February 17 - 23 this year. An interesting fact is that, in the United States, Engineering Week is determined each year by selecting the week that contains George Washington's actual birthday (February 22nd).

I hope to see you all at our Thursday, January 24th meeting.

Rich

NOVEMBER/DECEMBER PRESENTATION

Our program was a web cast by Lee Stogner, PMP, Chair, Region 3 titled "IEEE-USA and Public Policy". The presentation discussed the current activities of the IEEE-USA in Government Relations and our Public Policy. The web cast included a discussion session where Members voiced their opinions and asked questions. It was a very informative presentation enjoyed by all.

JANUARY PROGRAM

DIGITAL MARKETING

There are a number of powerful ways for business of all sizes to reach prospects and customers on the Internet, one of which is Search Engine Optimization (SEO). It is considered the single most effective way of driving traffic to a website. SEO helps to improve rank in Google search results, generates leads and sales at the lowest costs, and boosts local search ranking. Analysis and thorough testing is required to ensure that techniques and products are always on the cutting edge.

If you are not using social media marketing for business and not speaking directly to your audience through social platforms like Facebook, Twitter, Instagram, and Pinterest, you're missing out! Great marketing on social media can bring remarkable success to a business, creating devoted brand advocates and even driving leads and sales. To create social media marketing campaigns, you need to consider your business goals and use them to map your social strategy to attract audiences and get noticed!

OUR SPEAKER

Gary Vela is a Peru-born successful American businessman and self-made entrepreneur. With over 15 years of experience in web development and online marketing, he founded Daytona Internet Marketing - Web Daytona in the year 2008 with the philosophy of forming partnerships, rather than becoming another online marketing service provider.

Gary holds a degree from Daytona State College in Computer Science and Business Management and is a member of the Daytona Chamber of Commerce.

His firm works with clients from different industries to create proven online marketing strategies for their online success.

ANOTHER TALE FROM THE OLD PROFESSOR

A GOOD STEM REQUIRES GOOD ROOTS

The United States lacks skilled workers in the fields of science, technology, engineering and mathematics. It seems that the solution is to create another acronym, STEM, and encourage youngsters to join the STEM crowd.

Somehow the United States managed to leave the bounds of the earth, fly freely through the skies and eventually travel to the moon. We won a "technology war" with the products of our advanced technology and our industrial might. We made world-wide connectivity from a pocket-sized device. All of this and more was done without STEM.

Of course, it was science, technology, engineering and math that were the inner workings of those achievements. STEM has been around for centuries in spite of it recently acquiring a catchy moniker.

I like to compare people's exposure to STEM to the ISO seven-layer model for data communication. The top of the model is the application layer which is the initiation of a data exchange. The application layer at the receiving end is the receipt of the data. The application layer is the "visible" part of the seven-layer model; the layer people will see. The real workings of data transmission are buried deep in the model and out of sight to a user. As we work our way down to the bottom of the model, we find the physical layer which are the signals in wires, or light pulses in fiber optics or radio waves. Everything between the top layer and the bottom layer is preparing the data for the physical layer. This involves breaking up the data into packets, numbering them, sequencing them, routing, insuring they all arrive at the receiving end, etc. Everything that was done on the transmitting end as the data progressed through the seven layers is reversed on the receiving end so the data arrive at the receiving application layer in the form it was originally transmitted.


The 7 Layers of OSI
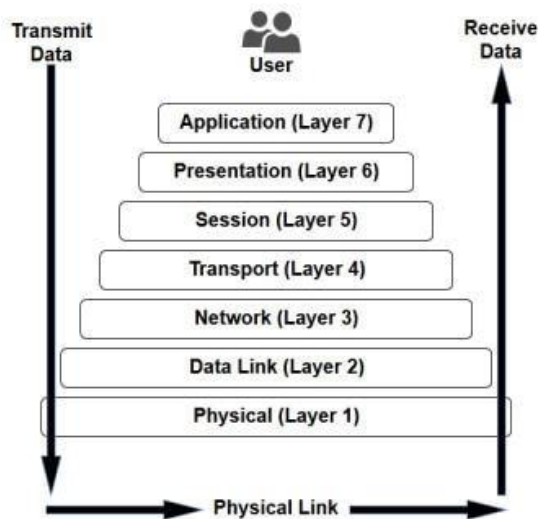
Computer scientists will tell you the seven-layer model was created in the 1970's. But the concept has been around since 1851 when the Western Union Telegraph Company, WU, opened its doors for business. Let's see how the seven-layer model was used in the mid 19th century.

A customer, wishing to send holiday greetings to her father would go to the local WU telegraph office and write her message on a piece of paper. The office clerk would add more information such as which telegraph office the message would be sent, a word count, and the street address of the recipient so a courier could deliver the telegram.

Then a skilled telegrapher would convert the letters and numbers on the written telegram to the dots and dashes of the Morse code using a telegraph key. In addition to the information added by the WU window clerk the telegrapher would add standard telegraphy characters such as beginning of message, breaks between headers and the main message and finally a trailer which would end with dit-dit-dit-dah-dit-dah or SK without a space between the letters, meaning "end of message".
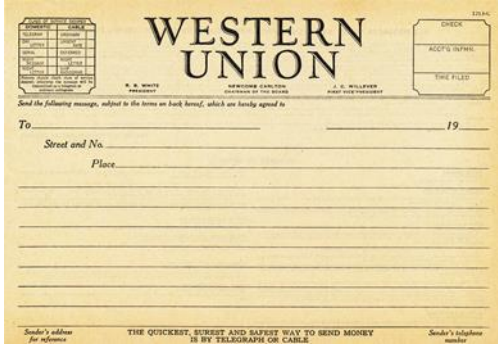
The telegrapher's key caused electrical signals to be sent on the telegraph wires to the next stop of the path. That's the physical layer. The message would be routed through the WU system and eventually cause a telegraph sounder to click and clack at the receiving office. A skilled telegrapher at the receiving would decipher the clicks and clacks and type the message using a "mill". A mill was a special typewriter in that it only had upper case letters and a zero with a slash to distinguish it from the upper case "O". The written message was then carried to the recipient by a courier. In other words, the message arrived at the receiving application layer printed on paper in the same form as it was initiated.

Our young lady WU customer only experienced the top layer of the seven-layer model; the application layer. She was not exposed to how her message to her father made it to the receiving end. I feel a lot of STEM toys and projects are guilty of overdoing the application layer and imparting very little knowledge of the fundamental science that makes something work.

It's the physical layer, the wires, signals, keys and sounders that made up the roots of the system that the entire Western Union telegraph network relied on. The upper layers were necessary accoutrement to allow the "untrained" public to take advantage of electrical telegraphy. That's because the public can't manipulate a telegraph key or decipher the clicks and clacks of the sounder to access the physical layer directly. Of course, WU was successful because it employed a wide area network, WAN to reach its many customers. (You didn't think that WAN was a modern 20th century concept; did you?). In fact, WU employed several WAN's.

These networks were connected via an internetwork or internet. (You didn't think that was also a 20th century term; did you? Notice the Internet we all know today is capitalized.)
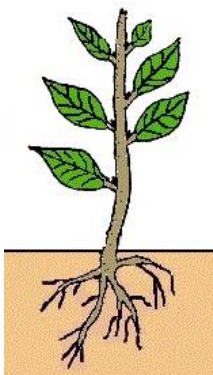
STEM products and educational programs should give as much insight to the physical layer as possible. It's the "bottom layer", the fundamental science; the roots, that support the STEM.

Dr. Al Helfrick, a.k.a The Old Professor

LIFE MEMBER AFFINITY GROUP NEWS

The Life Member Affinity Group toured the manufacturing facility of Everglades Boats in Edgewater on Dec. 6, 2018. Our tour guide (James) was outstanding. He obviously knew his way around the manufacturing facility, and was an outstanding advocate for Everglade Boats.

Manufacturing begins with the forming of two fiberglass hulls – an outside hull and an inner hull. A rigid layer of Foam is placed between the two hulls and they are permanently fastened together with a confidential material and process. This results in a hull that is over an inch thick and very strong. The seats, cabin, roof, and other fittings are all assembled to the hull, usually with screw or bolt fasteners. In several places a heavy sheet of aluminum is embedded in the casting so that it can be drilled and threaded for bolts.

Watching the workers and verified by James, there is a lot of hand work which requires substantial skills in working with the fiberglass. Fortunately, the operators made their tasks look easy. Everglades builds some 350 boats a year spread over approximately 15 different models. So, automation would probably not pay.

All the boats are powered with outboard engines. The individual models have a choice of several engine sizes and can have from one to four such engines. Until recently, their biggest engine put out 350 hp and weighed over 800 pounds. Now they have the option of a 425 hp Engine that weighs just over 1000 lbs. Even their 43 ft. model will be able to do 50 miles per hour with these engines.

With that amount of power and speed, **each** engine will consume 25 gal of gas per hour.

Throughout the manufacturing process, a lot of attention is paid to quality control. At the end of the line, each boat is given a thorough going over. They even have a pool where every boat is tested, including the motors, before it is shipped.

 We had a great tour and concluded that Everglades builds a good solid high quality product.

Submitted by: Ron Gedney, Life Member Chair

DAYTONA SECTION SHIRTS

We are pleased to offer Daytona Section polo shirts for our Section members. The shirts are embroidered with the IEEE Logo and DAYTONA SECTION on the left and your name and grade, if desired, on the right. The shirt is a high quality 5 oz, 65/35 poly/cotton pique in Royal Blue with white embroidery. Available in S - 2XL in men's as well as ladies' sizes. Price is $30, including tax, for S-XL size's, 2XL size is $3 additional. For more information or to order shirts contact: Allan Jusko 386-671-3706 or a.jusko@ieee.org.

FUTURE MEETING DATES:
The dates for the spring session are: Feb 28th, Mar 28th, Apr 25th

EDITORS NOTES
Visit our Daytona Section website: http://ewh.ieee.org/r3/daytona/

ENGINEERING HUMOR

"We couldn't afford faster computers, so we just made them *sound* faster."

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JANUARY 2019 MEETING

Thursday January 24th at the Halifax River Yacht Club
331 South Beach Street, Daytona Beach, Florida 32114
Just south of the Fire Station at the corner of Beach and Orange Streets

TOPIC– Digital Marketing

SPEAKER – Gary Vela, Founder
Daytona Internet Marketing - Web Daytona

AGENDA
5:30 PM Greetings & Cocktails
6:00 PM Dinner
7:00 PM Presentation

Dinner Entrée Choices

Pesto Style Chicken - Chicken Breast pan seared. Served with a creamy Pesto Sauce, toasted Pine Nuts and Parmesan Cheese

Flounder Almondine - Sautéed flounder, brown butter, lemon and almonds
BOTH ENTREES SERVED WITH RICE PILAF AND SAUTEED BABY CARROTS

Beef Tips Dijonnaise - Sautéed Tenderloin tips with mushrooms, shallots, white wine, Dijon Mustard, Demi-glace and cream. Served over bowtie pasta

A **Veggie Plate** is also available upon request
Dinners include a house salad, bread, coffee or tea

Members and guests $20.00 each
Students $5.00

IMPORTANT DINNER NOTE!

The Yacht Club is requiring us to give them a dinner and menu selection count by the Tuesday afternoon before our meeting. Since the menu items are special selections for each of our meetings and are prepared to be served at the same time, this gives the chef and kitchen time to order, receive and prepare the food items.
As always, all members and guests are welcome to attend the meeting and presentations, however any dinner requests received after Tuesday afternoon may not be accepted

Please contact Allan Jusko by <u>Tuesday January 22nd at noon</u>
to give us a count for dinner or for further information

If you make reservations and are unable to attend, call prior to the event to cancel.

The Section is charged for all dinners ordered, please let us know if your plans change

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